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THE celebrated insurance case of the Boston *Advertiser* building has been decided by the Supreme Court of Massachusetts, and all architects and real-estate owners will read the decision with great interest. It will be remembered that, in 1901, the upper portion of this building was destroyed by fire. Under the laws of Massachusetts, a building, of which more than a certain proportion has been destroyed by fire, must, if repaired, be made to conform to the statutes regulating building construction at the time the repairs are made. Between the time of the erection of the *Advertiser* building and that of its burning, the statutes regulating construction had been changed; and it was found that to restore it as the law required would cost about forty-six thousand dollars; while to restore it to the condition in which it existed before the fire would cost only about thirty-one thousand dollars. The owners repaired it as they were compelled by law to do, and called upon the insurance companies for the forty-six thousand dollars which it cost to do so; and the insurance companies offered the thirty-one thousand dollars which it would have cost to restore it to its original condition, but refused to pay more. The owners brought suit, and the highest court in Massachusetts has now decided that an insurance company, unless its policy, as in the case of the Rhode Island standard policy, expressly limits the liability of the company to what it would cost to replace the same building, is bound to take as its measure of damages the actual cost of replacement in accordance with the building-laws as they existed when the policy was issued. That is, as the court said, "insurance companies must take the risk of restoring property, not to exactly the same condition that it was in prior to a fire, but to as near that condition as the building laws will permit the owner to repair the property." One of the Boston papers remarks upon this that, as the insurance companies have been active in calling for stricter building laws, it is only justice that they should take the risk of paying the increased cost of rebuilding after a fire due to such laws.

THE Boston architects who have received notice that union bricklayers will not be allowed to lay brick upon foundations put in by certain stonework contractors will read with interest the accounts of the suits instituted by a firm of hatters in Danbury, Connecticut, against the hatters' union of that place, for boycotting of a very similar character. The hatters in question, Messrs. D. E. Loewe & Company, had refused to discharge, at the demand of the union, certain non-union men employed by them. The union sent notices to dealers in hats, advising them not to buy goods manufactured by Loewe & Company, under penalty of being themselves boycotted, and had in other ways injured the business of its victims. Now Messrs. Loewe & Company have appealed to the courts for redress. Many of the members of the union are

property-owners, possessing, in many cases, houses and land. The property of these members has been attached in suits brought by Loewe & Company on two different grounds. In one set of suits a claim is made, under the State laws, for damages for injury to their business by unlawful conspiracy; and, in the second set, an action is brought under the Sherman Anti-Trust Act. As each member of an unincorporated union is individually liable for all the debts of the union, those members who have any property may see themselves deprived of it to indemnify the people whom their reckless and irresponsible leaders have injured; and, in any case, they will be compelled to face the annoyance of a lawsuit. Those members who have nothing to lose will, of course, look on complacently at the troubles of their brethren; but it should not take a great many lessons of this sort to make the sober and responsible members of unions in general more cautious than they are now about turning over their affairs to the management of the most reckless and foolish among them.

IT is reported that the American Federation of Labor proposes to meet the action of President Roosevelt, in reinstating Miller in the Government Printing Office, and in ordering that employment in that establishment shall not be restricted to union men, by a declaration of war, and to use, for the purpose of compelling the President to recede from his position, not only the means of coercion familiar to "organized labor," but the threat that, if he does not surrender, the influence of the unions will be exerted to prevent his nomination for the Presidency next summer. We may say, in the first place, that we doubt very much the truth of the story. The experienced schemers who control organized labor are generally too prudent to engage in any direct conflict that they can avoid. While they boast and threaten openly, where there is little chance of their threats and boasts being investigated, their real weapons consist of secret "deals" with politicians, underhand persecution, and vague terrorism, and it would be hard to find a man less likely to be influenced by any of these than our energetic young President. The American Federation of Labor, also, has lost much influence of late, even among organized union men; and a contest with the President of the United States would be little short of suicidal. However, it may be that its desperate condition is the very thing which disposes its leaders to risk everything in a desperate undertaking. If so, the struggle is to be welcomed, so far as citizens in general are concerned. Nothing would do more to enlighten the minds of the community in regard to the purposes and practices of the labor leaders than an open contest with the public authority, and neither Mr. Roosevelt nor the public is likely to be much alarmed at the threat of political attacks.

THE death of Professor Corfield removes a conspicuous figure in the field of sanitary science. Although not, perhaps, the most judicious among English sanitarians, he was one of the most earnest, and did a great deal of good by his enthusiastic advocacy of cleanliness at a time when the public had very little conception of hygienic living. He was, moreover, a man of great and varied scientific attainments as well as a specialist in hygiene. Receiving his mental equipment at Oxford, and, subsequently, at University College, in London, and in the medical schools of Paris and Lyons, he was, when a very young man, appointed Examiner for Honors in the Natural Science School at Oxford, and, not long afterwards, was made Professor of Hygiene in University College, London, the chair having been established expressly that he might fill it. In connection with his duties as Professor, he founded at University College a hygienic laboratory, perhaps the first in the world, and carried on many important investigations. His studies of water-supply alone would be sufficient to make him famous; and he was perhaps the first man of science to maintain, and to demonstrate scientifically, the theory of the spread of typhoid fever by means of germs diffused in water, in opposition to the received hypothesis of its spontaneous generation. For all these labors the world owes him a debt of gratitude, the magnitude of which can be best realized by those who are able to compare the condition of

public knowledge, forty years ago, in regard to drainage, air and water-supply, with the present universal enlightenment on such subjects.

THE architects of Orange, New Jersey, have formed an association, to be known as the Architects' Club, which proposes to devote itself to the cultivation of professional ethics and professional interests. The code of ethics adopted by the Club is the same as that current in professional societies generally, with an addition, requiring members "to help all juniors, draughtsmen and students." The once beautiful villages of Orange have now grown and united into a large and beautiful city, with such highly-developed communication that it should be comparatively easy to carry on a friendly association of this sort, and, judging from our own experience of Orange society, we are sure that it will be a very pleasant one.

AS we have already mentioned, the Sixth International Congress of Architects, instead of being held in St. Louis, as the American members of the profession hoped might be the case, will take place in Madrid, Spain, from the sixth to the thirteenth of April, 1904. The usual programme of discussions and excursions is offered, the Congress terminating with a farewell banquet. Political and religious discussions are absolutely prohibited, and the conclusions of the papers or discussions are required to be expressed in French, so that members unfamiliar with Spanish will be able to understand at least the substance of the decisions of the Congress. Papers to be submitted to the Congress should be in the hands of the Secretary, either complete or in an abstract, by September 30, at latest. Further information, in anticipation of the publication of the detailed programme, may be obtained by addressing the Secretary of the Executive Commission, at the Academia de Bellas Artes de San Fernando, Alcalá, 11, Madrid, Spain.

IT is quite time that something should be done to reform the methods of the teamsters and expressmen charged with delivering building-materials, baggage and other goods. Many of these gentlemen seem to consider themselves legalized robbers, and to view the fact that some one has entrusted them with property as a simple opportunity for extortion. Every day these worthies bring valuable merchandise, the delivery of which has been paid for, to houses or other buildings, and refuse to give it up unless they are paid an additional sum; and, unless their demands are complied with, they cart it off again, to its serious damage, and retain it, often without the knowledge of the owner, until some one misses it, and submits to their extortions rather than abandon it altogether; or, as an alternative, throw it into the street, where it is left, exposed to the weather and to theft. It might be well for people who find this practice profitable to remember that it approaches dangerously near larceny to carry off goods entrusted to a teamster, on pretext of non-payment of demands made upon some one not a party to the contract of transportation; and the arrest and sentence of a few of the teamsters guilty of it, with civil actions against those responsible for their performances, would have a very wholesome effect. Some years ago, if we remember rightly, the expressmen in New York adopted a habit of leaving trunks on the sidewalk, or in some other place convenient to them, instead of delivering them where they belonged, and the matter was brought to the attention of the courts, which administered an effective correction; and the lesson apparently needs to be repeated in other places.

ARCHITECTS, to whom expenses for expressage often form a matter for serious consideration, might, perhaps, with advantage agitate among themselves for a revival of the movement for the establishment of a parcel-post in the United States, similar to that maintained in every other civilized country. Several years ago the subject was discussed, and the Postmaster-General even prepared a plan for a United States parcel post; but, as he naively confessed in his annual report, the express companies made such opposition to the scheme that he was obliged to abandon it. There is very little probability that the express companies will favor the establishment of a parcel-post, which would interfere quite materially with the enormous profits of their business; but the people who are not stockholders in the great combination of express companies have, perhaps, a right to be considered, and the recent advance in express rates, which, in many cases,

have been doubled, should make still more urgent the appeal for relief. Very few people in this country have any idea of the cheapness with which articles are transported in Europe. We have sent a large box from Paris to Liverpool, a distance of about five hundred miles, for twenty cents. The charges in this country would have been at least a dollar and a half. In the German cities, multitudes of people have their butter, eggs, fresh fish and other provisions sent to them by parcel-post from the country every morning, at a cost of a few cents for a day's supplies. Even in this country, which maintains, by treaty, a parcel-post with a few foreign countries, a package of reasonable weight can be sent from New York to the interior of New Zealand for less than the express charge to Boston. Unfortunately, there is no domestic provision of the sort, and the unfortunate citizens of the United States are practically delivered over, bound hand and foot, to the express monopoly. We have heard a great deal of late about the hostility of both political parties to trusts. We are ourselves inclined to the opinion that most of the trusts are their own worst enemies, and that they might with advantage be let alone, except where they interfere with the liberty of other people; but the express monopoly is, to a serious extent, a hindrance to civilization, and a check to the free internal commerce which is, for us, a political necessity. It may have served a useful purpose in its time, but it has grown very rich in doing so, and would have no reason to complain if the transportation of parcels should be assimilated in this country, as it is in nearly all others, to that of the transportation of letters. The express companies are, undoubtedly, quite aware of the probability that a demand for parcel-post will be made sooner or later, and some of the transactions which have taken place, or have been proposed, in the postal service have a curious air of having been calculated to postpone the demand. The second-class-matter regulations, for example, while they are of no advantage whatever to citizens generally, absorb uselessly several million dollars a year, which might be used in establishing a parcel-post, and would probably, in obedience to the wishes of the public, be so used if they were available. In the same way, the periodical agitation for the reduction of postage on letters to one cent, which no one really desires, would, by creating a deficit in the postal revenues, prevent the establishment of a parcel-post service, which would be of material value to every citizen, in reducing the cost of what he buys, and facilitating the sale of what he produces.

A COMPANY has been formed in Pennsylvania for the manufacture of slag cement, and a factory will soon be in operation. It is hardly necessary to say that the manufacture of cement from iron slag, the composition of which closely resembles that of Portland cement, is by no means a new thing, but, so far as we know, no slag cement yet produced is equal in quality and uniformity to good Portland cement. We hope that the product of the International Cement Company, which works under patents of Dr. Otto Wirth, of Philadelphia, may be so far superior to the ordinary slag cement as to meet an extended sale, as a cheap and good cement would be a great blessing to this country, and the efficient utilization of waste products is one of the most important departments of industry. According to the newspapers, the process of the International Company consists principally in the removal of the sulphur. As we understand slag cement, while it is probably desirable to remove sulphur, it is still more important to have the composition of the cement uniform, and this point presents the principal difficulty. Naturally, the ironstone used for producing the crude iron varies in composition, and it is mixed, rather roughly, with limestone, also of varying composition, before it is put into the blast-furnaces. During the process of smelting, the silica and alumina of the ironstone combine with the lime of the flux to form the fusible, glass-like material known as the slag, which floats above the melted iron reduced from the ore. While it would be, of course, possible to analyze the ironstone and the limestone, so as to have the slag of uniform composition, it is a serious question whether the ironmasters will be disposed to do this, and, unless something of the kind is done it is very unlikely that the cement made from the slag will be so even and reliable as engineers and architects require. The first cement is to be made from the slag of the Jones & Laughlin Steel Company, which has a high reputation for scientific enterprise, and, if any ironmasters are likely to try to control the composition of their slag, as a valuable product, this Company might be expected to do so.

## THE PRIX DE ROME: A PUBLIC PLACE.

IT is a prevalent idea, even among those possibly competent to know, that the Grand Prix de Rome is a prize given and awarded by the École Nationale des Beaux-Arts. As a matter-of-fact it is neither of these. The prize is a State institution and is awarded by the French Academy. The competition is, however, held, so to speak, under the auspices of the École. The competitors may or may not be pupils of the school. To be eligible there are only three real essentials: Frenchmen, single, and under thirty years of age. Nevertheless each competitor whose attainments are unknown, coming perhaps from some obscure town in the provinces, must be furnished with a letter from some competent person stating the qualifications of the candidate. This is merely a preventive measure to insure good faith in the competition, and a necessary restriction on some venturesome spirits hardly cognizant of Vignola, but ever ready for higher flights.

The competition therefore is, as is typical of all French competitions, open to all, and hence the number present for the first trial very large. The selection proceeds by elimination and through three successive competitions, all of which are held at the École des Beaux-Arts. Often more than 300 applicants are present for the first trial. The sketch is of twelve hours' duration and in the nature of an elementary problem, requiring, however, a complete solution in plan, section and elevation. The best thirty are selected to enter the second competition. To these are added thirty others (the privileged of the École des Beaux-Arts), who by a certain number of medals won in the school's competitions are entitled to go in for the second trial without undergoing the first. The sixty men thus chosen compete during twenty-four consecutive hours on a problem of plan that involves a knowledge of composition of the first order.

It is from these that the final ten destined to fight for the Grand Prix are picked. But these ten, called logists (because all their finished drawings are required to be made by each man alone *en loge*) must again make a four-day sketch, showing what is his conception of the problem, a sketch to which he must adhere during the ensuing four months.

The programme of this supreme test generally involves the composition of a group as well as the study of detail. Invariably the most expressive and characteristic solution of the problem wins. Two awards other than the Grand Prix are made, classed respectively as First-Second Prize and Second-Second Prize.

The winner of the Grand Prix receives, during a period of four years a regular pension from the French Academy and while in Rome has quarters in the Villa Medici. The other two logists classed receive stated amounts of money.

It is, perhaps, unnecessary to recall here the struggle of a number of years ago when such a violent series of attacks were made against the methods of the school and the Academy, no longer considered modern and abreast of the times. Curiously enough a man who was not of his time and an architect whose work was non-creative (Viollet-le-Duc) was foremost among those seeking to abolish an institution dating from the time of Colbert.

However it is interesting to note that that strong spirit of antagonism is practically dead to-day and the custom upheld for more than two centuries continues. Moreover, the Grand Prix de Rome men on their return do not live in the dreams of ancient Greece and Rome. Their work expresses the country, the people and the times. The Palais de Justice, the Opéra, the Sorbonne, the art palaces of the Champs Elysées, the Gare d'Orléans and many others are the work of former pensionaries of the Academy, and are all distinctly French—nineteenth and twentieth century French. The inspiration drawn from the Classic masters is moulded and tempered with French thought, as was no doubt the Egyptian art in the hands of the Greeks. The nation's intellectual vigor is too strong to allow a pale, weak reflection of the past, and the great French architects leave archaeology to the savants. It is the valiant spirit of inventive style that has given France her position in the art world—just the sense of proportion, a knowledge of the real conditions and the supreme art of expression. The pensionaries at the Villa Medici are offered many facilities by the Government and a vast field of the richest inspiration. What a meagre result, absolutely negative in art, if such a condition of things could at best breed faithful archaeologists.

The programme of this year may receive particular attention with us just at this time, when in so many cities commissions have been at work on plans for municipal improvements. We have become alive to the fact that apart from the home and the comfort of the individual life there is the town, the home of a great collective life. The Anglo-Saxon mind has never really seemed to appreciate this. There is little life in the streets in either England or America. People are going or coming, they are not *being* anywhere, unless within four walls. And why? Most probably because the streets are unattractive, the vistas cramped or mediocre and the comforts *nil*. Where there is variety, unconsciously we loiter to observe, and unquestionably the monotony of the checker-board-planned town hurries both citizen and stranger on their way. The great secret of the charm of many European cities for us is the relief we experience in not being constantly face to face with the enslaving *terre à terre*. We are at one time perhaps in some tortuous and narrow street with every object foreshortened, while a few moments later, in a public square, great vistas reach out through streets and avenues, and a constant series of varying perspectives charm the attention.

In a city it is felt that broad avenues, handsome squares and gardens are not alone necessary. The architectural accent has a great rôle to play, and it was the placing and enunciation of this accent that constituted the difficulty of the Grand Prix problem.

The Grand Prix this year was awarded M. Jossely, a pupil of Daumet et Esquié, largely on the merits of the plan, the first consideration of all composition; and also, no doubt, for a great sincerity of expression.

The great place, firmly silhouetted, is admirably framed by the architecture and most skilfully cut by the avenues and streets. It is left free and unobstructed to circulation. The accessories, such as fountains, lamps, approaches, commemorative monuments, etc., are thrown to each side in proximity to the architectural groups. A certain amount of gardening, a few shelters and porticos and some statuary complete the *ensemble* and add a life and interest in harmony with the programme.

The buildings are in themselves well detailed, the scale being well sustained in each and in one with the others, and the balance nicely preserved in spite of a somewhat non-symmetrical premise. In fact the data for the military club and art club are not the same and the designer has ably differentiated in plan while giving his façades an apparent similarity necessary to a great and simple monumental effect. The architectural expression of Stock Exchange and clubs is excellent. In both clubs the "reception" floor is one flight up, hence the basement treatment of the *rez de chaussée*, while the Bourse has its great board-room on the first floor, and so the monumental portico of the façade springs from that level. All these buildings are well accented, the scale of their parts being in good relation to the interiors, and the elevations seem an ample and simple expression of the plans. Some exception might be taken to the introduction of the arch on either side of the lintel colonnade of the Bourse. It is disturbing and breaks the unity of the design, but this seems to be the only criticism of any consequence. The accessories are all charmingly studied. Their excellent disposition and scale add much to the value of the composition and, while serving to tie the units into a whole, add a singular atmosphere of reality.

The Second Prize is less successful from every point-of-view and, while there is some skill shown in the main outlines of the place, the general effect is dry, hard and unimaginative. There is a bad relation between voids and solids. The Bourse is particularly lost in its surrounding avenues. It seems small and insignificant. Moreover in itself it is signally defective. The mass of the board-room and surrounding corridors and offices is insufficiently attached to the portico of the façade which runs on uninterrupted. This portico, considered apart, is excellent in itself, but the great dome above is quite unattached to it; rather cold and of a different architecture. The side elevation, too, is equally faulty. The dome overpowers all, and the end termination of the portico is of a most exaggerated character. Neither is there anything on the other end of the long side to hold down the lavish triumphal note of this end termination. The scale goes to pieces on this side elevation. There is a bad relation between the parts, but the parts in themselves are well handled. The proportions of void and solid are excellent and all the detail good, and there is often a fine architectural sense. It is in the *ensemble* that each building is faulty and the same error of proportion is found in the entire conception of the place, which is badly obstructed with accessories and stiffly and monotonously cut by the streets. The designer has attempted no distinction between the club buildings and the direct symmetry prevails throughout the composition both in plan and elevation. Yet this criticism must not be taken as though the work was devoid of merit, for that would be far from my intention. The impression conveyed by different parts is excellent, often of the best, but the design has failed through a want of understanding of the programme. It is not realized along the lines intended, and while scholarly in some respects wants that air of reality so firmly marked in the Grand Prix. M. Wielhersch's work is made "*par morceaux*." *Ce n'est pas encore de la grande architecture*, but with his talent and energy success may not be refused him another year.

We are told that the drawings of all the logists were excellent and that the competition as a whole was remarkably strong. The result was somewhat discounted from the first. M. Jossely has won many honors at the École des Beaux-Arts and well deserves the crowning laurels that go with the highest of them all, *Le Grand Prix d'Architecture de l'Académie des Beaux-Arts*.

THEODORE WELLS PIETSCH.

## ARMED CONCRETE LATTICE-GIRDERS.

SINCE the advantages of the so-called armed concrete constructions have become known, numerous attempts have been made to secure maximum efficiency with a minimum expenditure of material and at a minimum cost of manufacture. A Zurich architect, Mr. Franz Visintini, has succeeded in designing armed concrete framework girders for building purposes which combine all the above-mentioned advantages.

As is well known, the advantages of a framework girder are due to the favorable distribution of stresses which all act in the central plane of the members, and also to the fact that framework girders require less material than solid ones, and are therefore considerably lighter. Visintini built up proper framework girders of concrete, reinforced with iron bars; the members subject to compression only

being made of concrete alone, while those always, or only with a certain distribution of load, subject to tension are made of concrete with iron core. In upper and lower flanges or booms these cores are constituted by cylindrical rods to which the iron cores of the struts are connected simply by bending their ends round the cores of the flanges or booms. No sliding of the iron cores of the struts on those

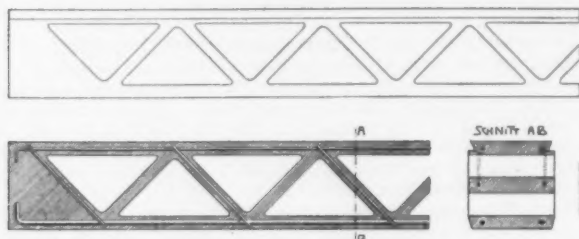


Fig. 1. Elevation, longitudinal and cross-section.

of the upper and lower flanges can take place, owing to the presence of the body of concrete enclosing them, so that concrete in this case replaces riveting.

As far as carrying capacity is concerned, there would be no necessity to provide members of compression booms with iron cores, but it is preferable to do so, as this affords the simplest connection between struts and flanges.

In the first place, the inventor intends to apply his system of girders to building construction, and he designed various girders, beams and other parts used for building purposes, in such manner that they can be manufactured away from the building yard. This is a great advantage, as hitherto it was absolutely necessary to build up armed concrete girders *in situ*. In this way, building operations are no longer delayed by the work of applying concrete, and the building yard no longer obstructed by centering and other boarding which was required hitherto. Visintini's armed-concrete girders are cast in moulds to which the iron cores are secured. The illustrations below show girders manufactured in this way, and intended to be

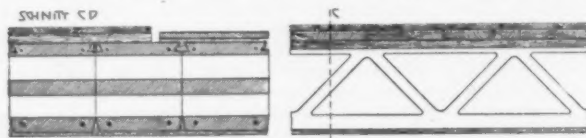


Fig. 2. Construction of the Floor on a completed Ceiling.

used as wall-plates, girders, beams, etc., for floors, roofs, staircases, etc.

When used for making floors, armed concrete girders are laid side by side, and the recesses filled with concrete. In order to prevent single girders from bending, which would cause cracks in the plastering, the floor is made one whole in the following manner:—

The upper flanges of each girder or beam are provided on both sides with longitudinal recesses of such shape as to produce, when two girders are placed side by side, a dove-tail groove. Small pieces of iron are placed in this groove which thereupon is filled with mortar, and in this way ample security is obtained against longitudinal cracks in the ceiling.

Numerous tests as to the carrying capacity of such floors, made by the inventor, and in some larger cities in Europe, have given highly satisfactory results.

In case of cellars, larders, etc., where the ceiling is not plastered,

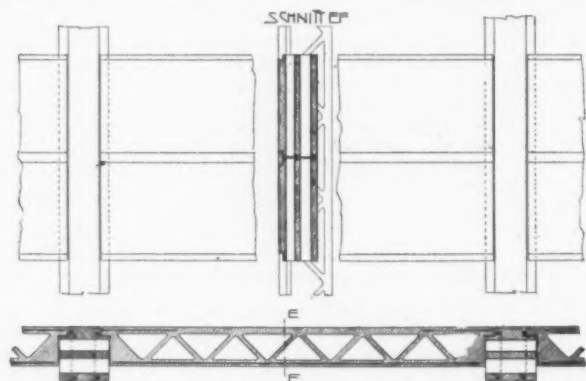


Fig. 3. Wall plates and filling girders.

the separate girders need not be connected together, and it may be confidently expected that, as in other armed concrete structures which are generally distinguished by great rigidity, there will be very little bending. Figure 2 shows how the various kinds of flooring are to be secured to the finished support.

For laying a boarded floor, small wood blocks are placed in the dove-tail grooves above referred to, before the mortar has set, the first set of boards being nailed to the said blocks and forming a support for receiving flooring boards. The illustration shows clearly the method of laying a floor of tiles.

The spaces between the upper and the lower flanges and the struts

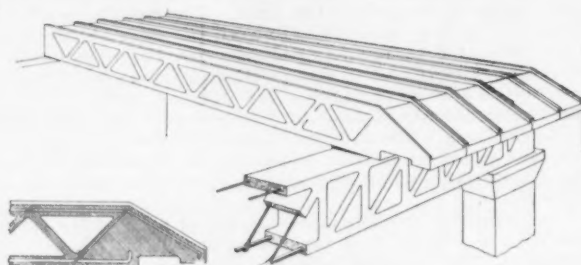


Fig. 4. Terrace Girders.

of the girders form, in a completed ceiling, passages (of triangular cross-section) running transversely of the girders. These hollow spaces or passages containing air, prevent transmission of heat and cold and of sound through the ceiling.

Another advantage of this construction is that passages immediately adjoining the upper flanges, can be utilized as flues for heating the floor, thus obviating the drawback of having cold floors.

Another construction of floors with armed concrete girders consists in arranging them at certain uniform intervals apart and bridging over the intervals with auxiliary girders (also armed concrete lattice-girders), as shown in Figure 3.

When armed concrete girders are to be used for making terrace, or flat, roofs, they are provided at one end with a drip and connected to form a roof in the way described, the roof being given a gentle slope in the longitudinal direction of the girders and rendered impermeable to water by means of a layer of asphalt. These girders afford a splendid material for construction of terraces or flat roofs, which is less affected by weather than any other material. Figure 4 shows such a construction and at the same time illustrates the use of armed concrete girders as wall-plates.

Armed concrete girders can also be used, singly as columns, or connected together to form a wall. These walls would also possess hollow passages or flues, to which applies what has been said with reference to the passages in floors. Figure 5 shows clearly how openings for windows and doors are to be made in such walls.

In building staircases, the chief consideration, besides sufficient strength, is that they should be fireproof. Unfortunately many so-called fireproof staircases are in reality by no means so. An example of it is the favorite hanging-staircase, consisting of steps let in at one end into the wall. A recent fire in Vienna has clearly shown that this construction is by no means fireproof, as the staircase collapsed a few minutes after the fire reached the stair-well. Stone cracks under the influence of heat. The case is, however, different with structures of armed concrete. They have been proved to be thoroughly fireproof in the most conclusive manner by numerous experiments. Moreover, a staircase built of armed concrete is exceedingly light and elegant, as shown by the staircases actually constructed. Hitherto, however, the building of such staircases was not simple enough to induce architects to adopt them on a large scale. It is a point in favor of the new construction of staircases that the parts arrive at the building yard all complete, so that it is a comparatively simple matter to put them together. The inventor

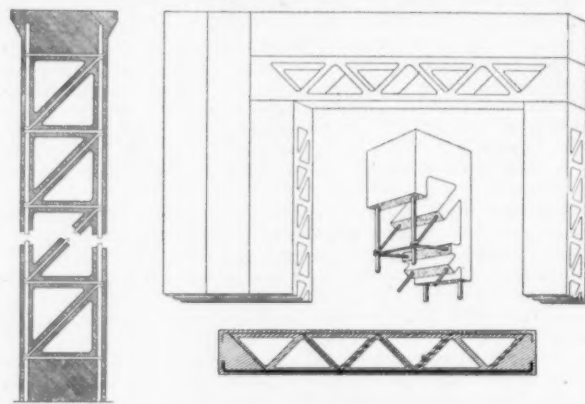


Fig. 5. Columns and their use.

has succeeded in designing armed concrete girders that combine all the above advantages.

A staircase built of armed concrete is clearly illustrated in Figure 6. The riser is constituted by an armed concrete girder with a tread connected to the lower flange. The girder may be either supported at two points or by a cantilever, according as it is desired to have

a supported or a hanging staircase. The illustration shows steps of a hanging staircase. The girder being a cantilever, is made fairly stout, but it could be made considerably lighter for supported staircases when it rests on two brackets. The illustration shows more clearly than any description could, the method of securing the tread to the girder constituting the riser, the iron cores of the said tread being in one piece with those of the vertical members of the girder. This simple method of connecting the steps together is very advantageous, especially as it compensates for any small irregularities in the manufacture or in erecting; this advantage is of special importance for the so-called geometrical stairs. The treads of the finished staircase are laid with some covering, and their front edges provided with a special ledge to prevent wear.

In hanging steps, the iron cores of the flanges can be extended to project beyond the free end of the steps, and utilized for securing the balustrade.

Although a staircase built of separate steps is not quite so light as one of iron and concrete which is made in place from beginning to end and the arms of which are then also in one piece, our construction combines the advantages of stone staircases with that of being perfectly fireproof; it is at the same time more reliable than a stone staircase, as the small tensile strength of the stone is here replaced by the great tensile strength of the iron cores.

The Visintini armed concrete girders possess, besides, the advantages inherent to all armed concrete girders, viz, they are fireproof, rigid, and not liable to vibrations. In order, finally, to help the reader to draw a definite conclusion, an extract from the opinion of the well-known expert, Prof. Fritz von Emperger, may be given here.

Prof. von Emperger refers first to the question of organization of building operations and says:—

"The organization of building operations obtaining at the present time, pre-supposes that all essential parts of the building, vertical

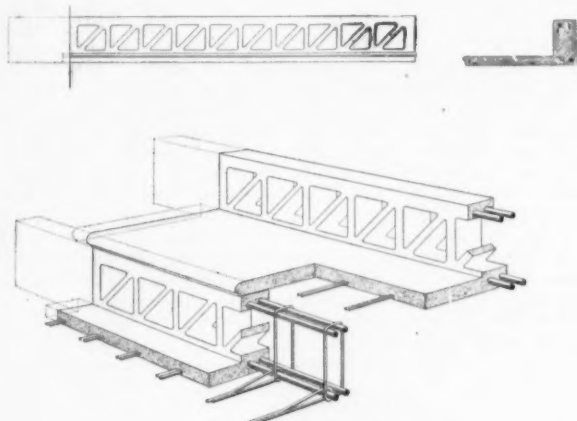


Fig. 6. Staircase steps.

walls excepted, have been made outside and delivered to the building yard." This organization has led to the invention of several systems of building in concrete and iron which enable most parts to be supplied to the building yard in a more or less complete state. It may be interesting to quote here the salient points of the opinion, relating to such systems. It says as follows:—

"With reference to the above mentioned systems, the following may be said as a general proposition:—

(a) With reference to the general organization of building operations, already touched upon:—

1. It is possible to test the parts delivered as to their quality and carrying capacity.

2. When the necessary level is reached, the floor can be quickly made with the parts delivered, without the work of erecting the walls being interrupted.

3. Owing to the parts being supplied in a perfectly dry state, the floors can be used at once and without any scaffolding, and the work of the interior fitting proceeded with.

(b) With reference to the manufacture in a separate work.

4. The parts are always manufactured in the said works by experienced staff and under expert supervision.

5. By keeping concrete moist for a desired length of time, it can be given the properties which it never acquires when applied during the building, since it is impossible to keep it moist without rendering the building damp, and since it is exposed to draughts and heat during the time of getting hard. This is of the greatest importance for the adhesion and efficient use of the iron.

6. The girders are protected from injurious consequences of the settling of walls and of the premature removal of the boarding or centering, etc., which are particularly dangerous in case of recently made concrete.

7. The sand and gravel used are carefully chosen on the ground of long experience and from the kinds well known to the works.

8. The same applies to the cement and to the proportions in which it is used, as well as to the testing of the necessary samples."

With reference to the Visintini system here discussed the following advantages are mentioned in the opinion in question:—

From the point-of-view of the architect:—

1. The air-flues produced by it in the floors can be utilized as heating flues or as conduits for laying pipes and wires, without the walls, or the decorations on them, being destroyed.

2. Prevention of cracks in the ceiling decoration.

3. Simplicity of renewal of damaged parts and facility of building annexes or extensions or making subsequent alterations.

With reference to the cheapness of manufacture:—

4. Great simplicity of the mould, therefore small expenditure for installing a factory.

5. Possibility for installing the factory in proximity to the building yard, for the purpose of reducing the cost of carriage.

6. Convenience of handling in erecting.

7. The smallness of the quantity of mortar required for connecting Visintini armed concrete girders in such a way as to ensure their acting as one structure.—*Beton und Eisen.*

#### THE BEGINNINGS OF CHICAGO.<sup>1</sup>

THE city of Chicago owes its existence primarily to the river bearing that name and to the fact that the river empties into the head of the most southwesterly of the Great Lakes. The history of this city, because it is situated at the mouth of one waterway and the head of another, is similar to that of other inland cities. The waterways were the ready-made highways of the interior. Up and down them passed the explorer, the missionary, the trapper, the trader and the pioneer farmer, tracing the way for future lines of commerce. At various obstructions along these ways, perhaps the head or mouth of a river, a portage, or a natural harbor, the products of adjacent regions were collected, to be forwarded in bulk to the Atlantic seaboard. The manufactures, which were sent in return, came to these inland points for distribution. Thus what had been in turn a camping-ground for the Indian, a halting-place for the explorer, a post for the trader, and a rendezvous for the pioneer, became a commercial centre which grew to a city. The mouth of the Chicago River was marked by nature to serve such a purpose.

Extending in a crescent sweep about the head of Lake Michigan is a low flat plain not over fifteen miles wide, reaching from Winnetka on the north through La Grange on the west to Dyer, Ind., on the south. Its concave side is occupied by Lake Michigan and its convex side is bounded by the great Valparaiso moraine. It was formed by the melting and retreat of the great ice cap which came down from the north in the Ice Age. At one stage the water was dammed up by the moraine, creating what is known to geologists as "Lake Chicago." At the bottom was deposited a flat plain of sand and clay which became dry land after the water had retreated to its present position to become Lake Michigan. The northern part of the plain is drained by the Chicago River and its two branches, one coming from a northern and the other from a southwestern direction.

So flat is the Chicago plain that the south branch of the river rises less than twelve miles from the mouth. Beyond the head of this branch is the outlet through which the pre-historic "Lake Chicago" was drained into the Desplaines River. The summit of this divide, between the drainage basin of the Great Lakes and that of the Mississippi Valley, is the old Chicago portage, unknown and unimportant in this railway age. Here the land is only 15 feet above the level of Lake Michigan. If the lake level had been 16 feet higher, it would have drained into the Mississippi. The slight elevation of the watershed suggested the possibility of the present Drainage Canal.

Upon the plain described above, the city of Chicago has been built. The ground is made up of boulders, sand and clay, a mixture commonly known as "glacial drift." The excavation for a building in any part of the city will show the unstable character of the soil. Beneath it at varying depths lies the solid Niagara limestone which may be seen in the stone quarries in many localities just outside the limits of the plain. The bedrock is not level but has many undulations which cause the varying depths shown by borings in different parts of the city. The deepest point yet found is about one-half mile north of the junction of the two branches where the bedrock lies 124 feet below the level of Lake Michigan. The average depth is estimated to be about 50 feet. Because of the instability of the soil, few localities could have been found more unsuitable for building a city. But the demands of commerce have slight regard for topography or for good building sites. The most recent method employed by builders to overcome the inherent difficulties of the unstable plain is to sink caissons to the bedrock and fill them with concrete. We can thus imagine our great buildings standing upon gigantic stilts which rest upon the bedrock far beneath.

In such a soil and on such level ground, the river would naturally flow sluggishly and would cut a deep channel, carrying the washings to be deposited in a bar at the mouth. It would in this way form a natural harbor for lake commerce, extending two or three miles inland. However, the history of Chicago dates back to a time when a harbor for vessels of large burden was not

<sup>1</sup> A lecture by Edwin Erle Sparks, Ph. D., delivered before the Western Society of Engineers, May 2, 1903, and printed in the *Journal* of that Society.

dreamed of. It began during the days of the French missionaries, when the utility of a river as a highway was the important consideration, especially if there was only a short portage from its head to a stream flowing in the opposite direction. The Chicago River was almost ideal in this respect, since it led by its south branch to the Chicago portage and thence into the Desplaines and the Illinois, being the connecting link between the Great Lakes and the Mississippi. Like all rivers in level countries, the sluggish waters of both streams allowed navigation far up toward the portage, especially in the rainy and melting seasons. It was possible, according to the accounts of the early explorers, to take a boat at certain times of the year over the Chicago portage without unloading it.

The French explorers and the Jesuit missionaries at first reached the Mississippi by Green Bay and the Wisconsin River. But they soon learned in returning to come up the Illinois to the Kankakee and thence to cross the portage to the St. Joseph River, now in Michigan, which empties into the southeast bend of Lake Michigan. At a later time they found the still shorter way by the Chicago River and portage. No satisfactory evidence has been left to show when this route was first used. Marquette and Joliet may have passed this way on their return journey from the Illinois Indians to the mission at Green Bay in 1683. La Salle and Tonty used the Chicago route before 1680. La Salle spent a part of the winter in 1682 in the first house built by white men at the portage. The following year he headed a report: "Du Portage de Checagou, 4 Juin, 1683." When the easy route by the "Garlic River," as the stream was sometimes called because of the foul-smelling wild plant growing on its banks, became fully known, it was one of the principal thoroughfares of the French during their prolonged journeys through the Illinois country.

Permanent French settlement, however, approached Illinois not by the Chicago portage, which the Jesuits and explorers had used, but came up the Mississippi after the founding of New Orleans. The French villages of Kaskaskia, Cahokia, and others which were founded in Illinois, soon fell into decay because of the advance of the conquering English and Americans. Even the stronghold of Fort Chartres, built to protect these villages, was torn down by the invaders to obtain building stone. Only the ruins of a powder-magazine remain to show where the fort once stood.

After the French had been driven out of the Mississippi Valley, the Chicago portage lay in obscurity for nearly forty years, until the onward march of the American people across the continent brought waterways and portages again into prominence. It was the policy of the United States Government to plant forts along the front line of people to protect them and to increase the sales of the public lands. These forts were erected on the highways of commerce where protection was most needed. Among the sites occupied in the middle West may be named the point where the French Fort Duquesne and the English Fort Pitt once stood, now occupied by the city of Pittsburgh; Fort McIntosh, where Beaver, Pa., now stands; Fort Harmer, at the mouth of the Muskingum; Fort Washington, at the mouth of the Miami, near which Cincinnati, Ohio, is now located; Fort Industry, at the mouth of the Maumee, about which Toledo, Ohio, grew; Fort Renault, now Detroit; Fort Wayne, still bearing the name, and Fort Mackinac, which is now surrounded by Mackinaw City.

As the people advanced, the Government was accustomed to quiet the Indian claims to the land by making treaties with the savages. By the treaty of Greenville in 1795, a line was drawn from east to west across what is now the State of Ohio and thence south to the Ohio River. Beyond this line the whites agreed not to make settlements, and the Indians agreed not to molest any one living east of it. An exception was made to the first part of the bargain by the Indians giving to the United States certain reservations at important points where forts could be erected to protect traders. Among the sixteen reservations provided for by the treaty of Greenville was one for "a space six miles square at the mouth of the Chicago River where a fort formerly stood." This reference to a fort was no doubt to the traditional French fort erected in 1685 as an outpost to Fort St. Louis. It was probably nothing more than a barricaded hut.

By 1803, trade had increased along Lake Michigan to such an extent that the erection of a fort at some point on its shore was felt to be imperative. It is said that the mouth of the St. Joseph River was first contemplated; but there was no reservation at that point as demonstrated on the map made by Morse in 1796. Hence, Secretary of War Dearborn chose the reservation at the mouth of the Chicago River as a proper site. Fort Renault, at Detroit, had long been garrisoned by several companies of the First Infantry. One of these was selected to proceed to the Chicago River and to erect the proposed fort. Captain John Whistler, with some of his officers and the women, came around the lakes by boat to the mouth of the St. Joseph and thence crossed the lake by row-boat to the river. Lieutenant Swearingen marched the men by way of Fort Wayne.

One may faintly imagine the appearance of the mouth of the river when these troops arrived in August, 1803. Scrub oaks dotted the sandy shores, replaced by trees of a larger growth out toward the fertile prairies on the westward. The river flowed sluggish and silent between low-lying, sedgy banks. Evidences of Indian encampments and huts of traders could be seen on all sides. Indeed, the soldiers found a French trader, Le Mai, living

in a small cabin near the mouth of the river. Near by dwelt Ouilmette (Wilmette), a half-breed Indian. Before the snows of winter covered the drifting sands, the soldiers and artificers had constructed two blockhouses, quarters for the officers and barracks for the privates, and had surrounded the whole by a high connecting stockade with a second lower palisade outside. A subway was dug through the sand to the river to supply the fort with water in case of a siege. Near the fort was built the log house or "factory," as such adjuncts to forts were called, where the Government trader exchanged his stores for skins brought in by the savages and private traders.

Not only were the general surroundings of the mouth of the river different from those of the present day. The river itself has been so changed in its course that a map is necessary to show it as the troops found it. A sand-bar had accumulated across the mouth, possibly caused by that mysterious current in Lake Michigan which deposits bars on the north side of obstructions on the west shore. The bar had pushed the mouth as far south as the Madison Street of the present city. This is well illustrated on a Government map issued when the first proposition to convert the river into a harbor was being considered by Congress. In the bend of the stream the fort was located. The drifting sand had made a kind of hillock or high ground at this point.

Between 1803 and 1812, the history of Fort Dearborn, as the fort gradually became known, through compliment to the Secretary of War who established it, is almost a blank. There was always one company stationed here, but it must have been a dreary and monotonous life on the sands along the shore. From time to time, the "factor" made his report to the Government, showing a prosperous trade. A few houses were built near the fort, that of Mr. Kinzie, just across the river, being the most prominent. The popular trees in front of his house figure in all early sketches of Fort Dearborn, looking northward.

The year 1812 found the entire Northwest alarmed over the Indian rising under Tecumseh. Burning cabins and scalped settlers warned the whites to fly to the nearest fort. Even the safety of Fort Dearborn was questioned, lying so far in the Indian country. Orders were given to the commandant to evacuate and retreat to Fort Wayne if he deemed it best to do so. Attempting to carry out these orders, the body of troops and settlers was attacked by the Indians near the present foot of Eighteenth Street. Twenty-six of the fifty-four regulars were killed, together with twelve militiamen, two women and twelve children. Five more regulars, it is said, were put to death after surrender. The prisoners were then distributed among the various tribes for service. Eventually nearly all were ransomed or made their escape. For many years a tree known as the "massacre tree" stood near the lake and presumably near the scene of the attack on the women in the wagons. It has been replaced by a spirited group in bronze representing the rescue of Mrs. Helm by a friendly Indian, Black Partridge.

At the close of the War of 1812, the fort was rebuilt on the same site, but of different design. One blockhouse was now felt to be sufficient. Settlers and traders gradually reoccupied their old quarters. The fearful experience of the massacre was never repeated. So peaceful were the savages that in 1823 the troops were withdrawn from Fort Dearborn to garrison posts farther west. However, in 1828, owing to the uneasiness of the Winnebago Indians, a company of regulars came up from St. Louis to reoccupy the old fort. The commanding officer was annoyed to find that the sand-bar across the mouth of the river prevented him getting his supply boats into a place of safety from the storms on the treacherous lake front. He employed his men in digging a temporary channel through the bar, a prophecy of the later Chicago harbor; but the currents soon filled it up after the troops were withdrawn.

In 1832, the Black Hawk War brought General Scott and a large body of troops to rendezvous at the deserted Fort Dearborn. Once more the attention of Congress was called to the fact that vessels on Lake Michigan could not approach a fort which had been built to protect that body of water. Shipping must lie in the offing and discharge their cargoes by lighters. Various reports from engineers connected with the troops stationed at the fort had called attention to the same obstacle and also to the ease with which the mouth of the river might be converted into a harbor. It needed only two parallel piers out into the lake and dredging between them. No other point in the vicinity offered such possibilities. The value of the property destroyed in one season by the storms on that portion of the lake, it was declared, would go far toward making a harbor. Frequently auctions were held to dispose of the cargo of unlucky vessels caught on the unprotected shore.

Such arguments brought from Congress in 1833 the first appropriation for straightening, deepening and widening the Chicago River and converting it into a magnificent harbor. These appropriations were small at first, aggregating only \$486,000 in nearly forty years; but were increased from time to time with the increased demands of trade until they have now passed the \$4,000,000 point for the Chicago River and harbor alone. It is interesting to note that almost contemporaneously with the first appropriation, an enterprising trader killed and packed meat for shipment to Detroit instead of sending the cattle and hogs on foot, as had been the practice. About the same time, small elevators began to appear on the banks of the river. Grain was hauled to them in wagons from

the prairies and lifted by rope and bucket to the top of the building, to run through chutes on the other side to the hold of a waiting vessel.

Fort Dearborn, near the mouth of the stream, formed one of the centres of growth of the embryo city; the junction of the two branches, commonly known as "Wolf's Point," became another. A sketch made at the latter place in 1832 shows on the left the Wentworth tavern or trading-house, and on the right the Miller house, which was also used as tavern and residence. Between them ran a log bridge across the north branch of the river. Only by comparing the scene with a modern photograph taken from the same standpoint is the change in the river and surroundings appreciable. Passing down the main stream to the right, one reaches a point on the bank opposite to that once occupied by the old fort and beholds a similar transformation. Where the rope ferry was once poled across the river, a great bridge now swings noiselessly to allow magnificent vessels to pass to docks beyond. Wharves line the shore where rushes formerly flourished in the swampy margins. The sand between the fort and the river has been dredged away to allow great floating hotels to lie at dock and await the coming of passengers. A large part of the site of the old fort is now under the Chicago River.

The lake traffic, which gave the first impetus to modern Chicago, increased enormously between 1830 and 1870. The appearance of steam vessels and the harbor improvements were largely responsible for this growth. The exact time of the coming of the first steamer is in dispute, although it must have been near 1830. At the end of 1836, it was recorded that 212 vessels had been able to get inside the river. In 1854, there were forty-six vessels plying regularly between Chicago and other ports. In 1871, more than twelve thousand vessels entered and cleared from the Chicago harbor.

About 1830 railways, instead of canals, were advocated in the United States to connect navigable waterways. Few imagined that the railways could ever supplant the canal. A railway from the head of Lake Michigan to the Mississippi or even to the Rock River was for many years a Chicago vision. By 1848, it had been realized to some extent. The problem of conveying lead from the mines at Galena to the lake caused that city to be made the proposed western terminus. The locomotive "Pioneer," now preserved in the Field Columbian Museum, was brought to Chicago by steamer and was put to work on the few miles of strap-iron laid on stringers placed end to end on piling driven into the wet prairie between the Chicago and Desplaines Rivers. This was the Galena & Chicago Union Railway, whose frame passenger-station stood for many years just west of and across the North Branch from the present Northwestern station on Wells Street.

By the middle of the century, the rival railways between Lake Erie and Lake Michigan, the one constructed through "Central" Michigan and the other through "Southern" Michigan, rounded the head of the lake and came into the city simultaneously. The Michigan Central and the Illinois Central came along the lake front on piling driven into the water, which carried them as far north as the foot of the present Randolph Street. Between this piling and the beach, now Michigan Avenue, pleasure boats were sailed and rowed, giving the people of Chicago the use of a lake front which they have not since known. The railroads soon began to fill in the lake front, compelling the public to go beyond them in a park made by artificial means. Michigan Avenue, formerly the beach of the lake, is now far inland, and the mouth of the river at the foot of Madison Street exists only in tradition. Terminal yards and tall buildings occupy that part of the former site of Fort Dearborn which has not been dredged away in straightening the river. The old mouth is now a part of the new Lake Front Park.

After the final evacuation of the fort, the property was put in the care of the engineer in charge of the river improvements. The reservation of six miles square made by the treaty of Greenville was a transaction with the Indians and was distinct from the United States reservation for the fort. The latter, amounting to about seventy-five acres, lay in the shape of a triangle having its apex at the fort. The base-line crossed diagonally from the river near the foot of Dearborn Street to the lake shore near the foot of Madison Street. Under the law of 1819, which gave permission to the Secretary of War to dispose of military sites no longer needed, that official yielded to petitions from the citizens of Chicago and in 1839 divided the reservation into town lots to be sold at auction. Certain portions were reserved for public use. One of these became Dearborn Park and is now occupied by the Chicago Public Library.

The fort reservation will account for only a small portion of the land occupied by the city of Chicago. The remainder of the site, lying along the river and both branches, was included in the 290,000 acres of land given by the National Government to construct a canal over the Chicago-Desplaines portage. The streets, much as they are to-day, were laid off at right angles to each other across this proposed town site and the lots were sold at auction in 1830 for the benefit of the canal fund. Certain reservations were made for school purposes as well as a square for a court-house. The latter ground is now occupied by the county and city buildings. At the sale, the lots along the south branch near the junction brought

the highest price. The average price of all the lots was about three hundred dollars. The site of the present Sherman House brought forty dollars.

Much of the ill repute of Chicago in early days can be traced to the topography of the city. Water would not drain naturally from the low plain on which it was built. Cellars were almost impossible. Deluded purchasers found their lots under water. Between 1855 and 1860, the grade of the entire city was raised, in some places more than 10 feet. An old painting in the Chicago Historical Society's Building shows the comical appearance presented by the city during this period of elevation. Entire rows of buildings rested temporarily upon blocks and jack-screws. Pavements were on different levels. The conditions of things must have conducted to sobriety since the late return home of the typical club-man would have been an impossibility. The streets were filled to the new level and macadamized, instead of remaining paved with the old warped planks, which bespattered the pedestrian when a vehicle chanced to pass.

About this time, the little court-house, which had done service since 1837 in the public square on the corner of Washington and Clark Streets, was replaced by a two-story stone building, to which was added a third story in due time. A lawn both at the front and back of the building afforded space for public meetings. The leading statesmen of the day graced the rostrum of the old court-house steps.

The beginnings of Chicago may well close with her rebaptism in the fire of 1871. Without this blessing in disguise, it would have taken years to clean out the unsightly buildings due to the growth of the city from a frontier post. The easiest way to be rid of having to wear the clothing which one has outgrown is to burn it. Wooden pavements and frame buildings are stages of development. Chicago was done with both in the business district at one direful stroke. Only those who passed through the experience of the fire know its horrors. Only those who study a map of the "burned district" realize the space which it swept over.

The chief problem the Chicago of to-day must deal with is the river. How to provide for inter-urban movement with water traffic across the principal streets has claimed the attention of engineers and experts. Few other cities face the same problem. Generally the river or harbor is to be found at one side of the city proper, or it is not so long and narrow as the one which penetrates into the very heart of Chicago. How essential the river was to the founding and the growth of the city it has been the endeavor of the foregoing pages to show. Without the river, there never would have been a Chicago. Can the prosperity of the city continue without the free use of the river for commerce? We have tried nearly every conceivable manner of crossing that stream and yet not interfering with traffic. We have crawled under it in tunnels. We have gone around it in belt lines. We have made bridges that turn, that open, that lift, that slide, anything to reconcile land and water traffic.

The history of Chicago falls naturally into three periods. The French occupancy two hundred years ago, interesting though it is, has no real connection with the modern city. The second stage, that of Fort Dearborn and the troops, which covered nearly thirty years, is only remotely connected with the modern commercial centre. Industrial Chicago began with the opening of the harbor in 1833. Yet the building of the fort marked the beginning of continuous government under the United States. The stars and stripes, once raised on the staff near the middle of the fort, have floated over the city to this day. The protecting hand of the United States Government, represented in the troops a century ago, in the land given for digging the old canal, and in the appropriations for the improvement of the harbor, has never been withdrawn. Counting the building of the fort as the real beginning of Chicago, the centennial will occur in 1903, to be appropriately celebrated during the last week in September.

No city in the United States can excel Chicago in the picturesqueness of her past. No city has had such a succession of varied and striking types. Above her busy streets and lofty buildings pass in historic shade the Jesuit, the trapper, the trader, the pioneer, the soldier, the land speculator, the promoter, each contributing his unconscious part to the making of an American city. The canal, which Joliet wished to cut across the Chicago portage but to which La Salle objected because the stage of water would make it serviceable during only a small portion of the year, was realized nearly two centuries later by the Illinois and Michigan Canal. It has now been practically abandoned and superseded by a parallel artificial waterway designed for a ship canal.

That this service will ever be rendered by the Drainage Canal is unlikely because three great transcontinental lines of railways traverse the length of the portage. An electric trolley has been added as if to make a prophecy of the future. Where the Jesuit and his *donnes* once dragged their sledges by head bands and straps, where the *coureur du bois* tied his bright-colored sash about his embroidered hunting shirt and set afresh his pudding-bag cap before bending to the burden of his boat, giant locomotives now drag mile-long freight-trains or whirl portable hotels over the old Chicago portage.

Some day when all this is materialized on a commemorative column or historic arch, when it stands in enduring pageantry on a memorial bridge, Chicago will mean more to one class of its citizens than

a place to make a fortune and to another than a place of securing daily bread. Civic as well as national pride rests most securely on veneration for the past.



[Contributors of drawings are requested to send also plans and a full and adequate description of the buildings, including a statement of cost.]

THE HIGH SCHOOL, LEXINGTON, MASS. MESSRS. COOPER & BAILEY, ARCHITECTS, BOSTON, MASS.

#### PLANS OF THE SAME.

THE GRAND PRIX DE ROME: A PUBLIC PLACE. BY M. JAUSSELY.

THE programme for this year's competition is as follows: — This place is supposed opening on a broad avenue bordering a river.

Commemorative monuments, fountains, porticos, or other decorative motives might contribute, with the façades of important buildings, to the decoration of this place, on which streets and boulevards will abut. A monumental bridge will unite this place to the opposite side of the river.

A stock exchange (Bourse), a military club and an art club are supposed the principal buildings.

In the stock exchange provide for: A monumental vestibule and gallery. A board-room of 1,500 square metres in which the reserved enclosure for the brokers should be located, and in direct communication with this hall for the transaction of business. A large room for registering quotations. Room for the messengers of the stock brokers. Several rooms for the reception of customers, others for different categories of intermediaries connected with the building. Telegraph and telephone offices. All these dependences should have easy outside access. Police station, cloak-rooms, lavatories. On the floors above, location of offices pertaining to the stock exchange and for members.

The military club should comprise: Vestibule, custodian (concierge), waiting-rooms, parlors for strangers, grand staircase, secondary staircases. Salle de Fêtes, for balls and concerts, several parlors, billiard-room, reading-room, card-rooms, etc. Large dining-hall, and several for small parties. Study rooms, library, lecture-hall and museum. Salles d'armes, with accessories. Several apartments for general officers. Lodging-rooms for officers. Bath-rooms and hydrotherapy. Large covered swimming pool. Quarters for the clerk and employés. Stable for twenty horses. Kitchen, linen-rooms and dependences. Telegraph and telephone offices. Garden, terraces, etc.

The art club should comprise: Vestibule, covered carriage entrance, custodians, parlors for strangers. Carriage-room for automobiles. Grand staircase and secondary staircases. Large parlors, reading-rooms, card-rooms, etc. Salle de Fêtes for concerts and theatrical representations, with 800 seating capacity. Stage, dressing-rooms, accessories, etc. Exposition galleries for painting and sculpture, with special entrance for strangers. Fencing and hydrotherapy. Cloak-rooms. Large dining-hall and several of lesser importance. Library and study rooms. Kitchen, linen-rooms, etc. Lodgings for a few club members, others for the clerk and employés. Telegraph and telephone offices. Garden, terraces, etc.

The greatest dimension of the ground occupied by the place, buildings and club gardens must not exceed 350 metres. The avenue, 40 metres in breadth and also a portion of the bridge should be indicated on the drawings.

Required plan at a scale of 0.002 to the metre.

Two drawings showing the composition of the place, and a section of the stock exchange at a scale 0.004 to the metre.

FIRST-SECOND GRAND PRIX DE ROME, BY M. WIELHORSKI.

#### Additional Illustrations in the International Edition.

THE NAVE: ALL SAINTS', DORCHESTER, MASS. MESSRS. CRAM, WENTWORTH & GOODHUE, ARCHITECTS, BOSTON, MASS.

THE REREDOS IN THE SAME CHURCH.

THE BISHOP'S CHAIR IN THE SAME CHURCH.

DOORWAY: NO. 18 EAST 54TH STREET, NEW YORK CITY.

HOUSE AT WHITNEY AVE. AND WILLOW STREET, NEW HAVEN, CONN. MR. J. W. NORTHPROP, ARCHITECT, BRIDGEPORT, CONN.

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FIREMEN AND LIVE WIRES. — Heincke, in the *Electrische Zeitschrift*, gives a description of experiments made to ascertain whether there is any danger, and if so how much, of firemen being exposed to shocks by the stream of water which is thrown from the hose striking against a live wire. The author experimented with ordinary hydrant water, which in his case was not a very good conductor, and also with water to which was added five-tenths per cent of soda to make it conduct better. The copper nozzle of the hose was very well insulated from earth and the potential of the stream of water against the earth was measured with precision voltmeters. From these potentials he calculated the current strength, based upon the resistance of the human body of 15,000 ohms, as ascertained by Professor Weber in Zurich. Experiments were conducted with tri-phase current of 6,000 volts and 125 volts, and direct current of 240 volts and 550 volts with both kinds of water mentioned above. The experiments with tri-phase current were conducted with star connection, 6,000 volts between two lines, the neutral wire being earthed. The places where the stream of water struck the wires had been previously bared. It was shown that with ordinary water a length of the stream of 300 mm. is sufficient to render the effects of the electric current on the body harmless, while with five-hundredths per cent soda in the water the minimum length is 1,000 mm. It is to be remarked, however, that disagreeable sensations show themselves in the body of the person under consideration. With 550 volts direct current and pure hydrant water a dangerous potential was also not obtained, but with the good conducting water it showed itself at a distance of 80 mm. It is shown by these tables that the danger resulting from the playing of water on current-conducting wires is not by far so great as had previously been thought and feared, especially if it is considered that perhaps only in the rarest cases will wires which carry a potential of three times 6,000 volts come into consideration. — *Electrical World and Engineer*.

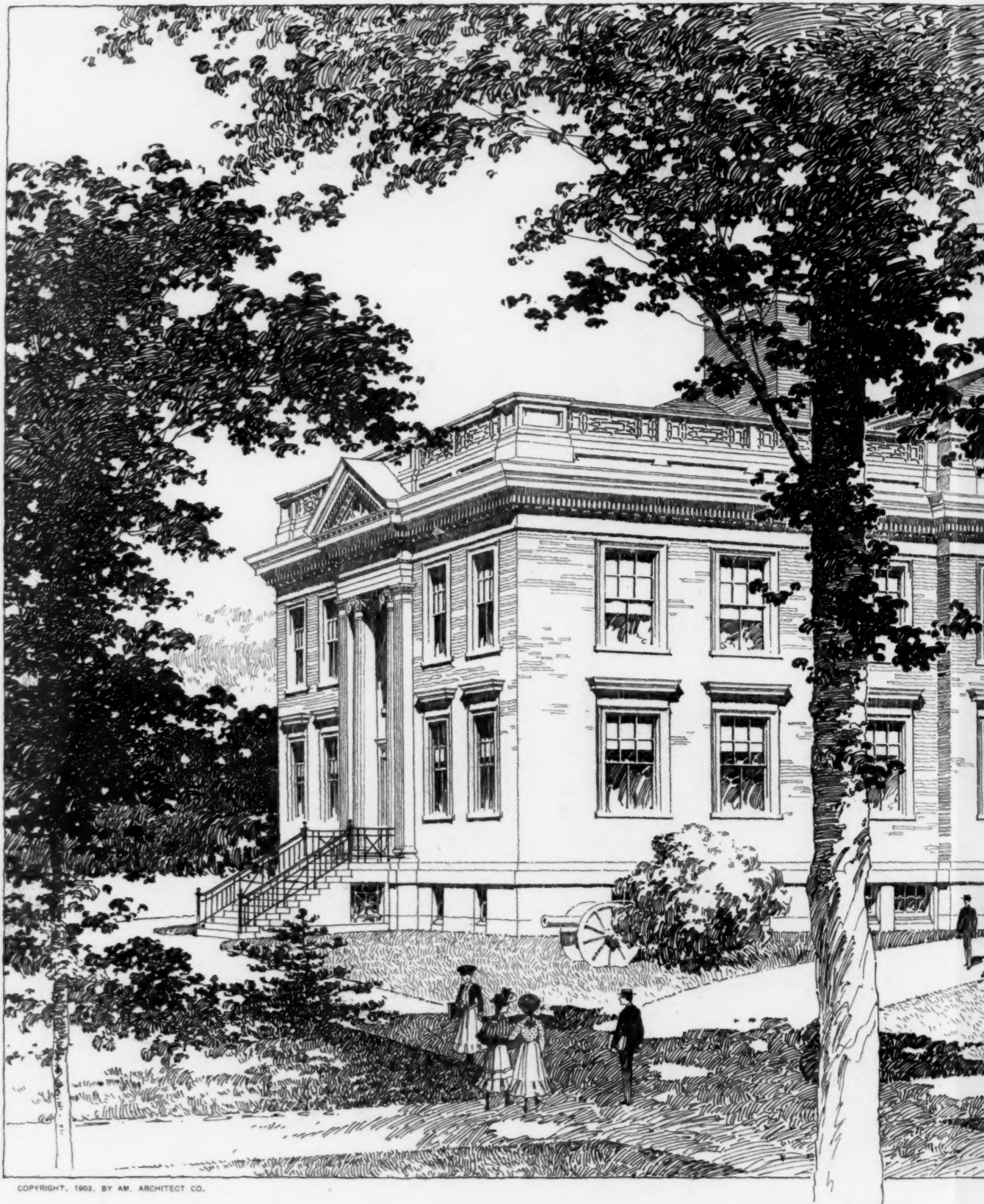
THE WALLS OF AVIGNON. — One is glad to hear that there is still some prospect of the preservation of the walls of Avignon. That charming city has already suffered enough at the hands of the utilitarian. The French Government has made barracks of the papal palace, cutting out the pointed windows, for sanitary reasons and, which perhaps is kind, covering those frescos which survived the brutality of the soldiers — with whitewash. Then a political person, M. Pourquery de Boisserin, who had become *maire*, tried to curry favor with the ignorant of his electorate by demolishing the mediæval ramparts, among the most beautiful and best preserved of their period in existence. He attacked two of the gates, but, happily, he has now been defeated at the election and is ousted from his office. We thought that they had in France a ministry of fine-arts which might have prevented this sort of thing, and we have heard it spoken of at times as a model for our use. But either it is woefully careless, pitifully incompetent, or, worst of all, too susceptible to political influences. In any case Avignon keeps its walls, and from the towers of Villeneuve, across the river, you may conjure up, with little effort of the imagination, a vision of the days when the bridge of St. Benazet might still be danced on. — *London Morning Post*.

SOME ART STATISTICS. — A return has just been published in connection with the importation of works of art into the United Kingdom, showing that France is responsible for the chief supply. During the year 1902 the United Kingdom imported "pictures and drawings by hand" (as the revenue authorities describe them) to the total declared value of £322,718. No less than £166,500 of this amount came from France in 5,916 items, the next countries in order being Holland, £61,185, and Belgium, £54,910. In these days of false "tiaras" and dubious Corots and Daubignys, one may make a shrewd guess that the thriving manufacture of "old masters" is responsible for no little of this special branch of trade. The imports of "works of art other than pictures" were valued at £237,200, France again heading the list with £123,904. The exports totalled £288,454 for pictures, France taking £85,447. — *Paris Daily Messenger*.

PRESERVING A TINTORETTO. — The great canvas by Tintoretto on the wall of the Grand Council Chamber in the Doge's Palace at Venice, over the Doge's throne, has been carefully removed and laid on the floor preparatory to having a new canvas substituted. It is 22 feet high and 68 feet long, and represents "Paradise." Tintoretto painted it in 1590, when but a few years beyond his "teens." The wall underneath was found in a bad state. Part of the old frescos, painted two centuries earlier by Guariento, was found in place where it had escaped a conflagration which nearly ruined the palace in the sixteenth century. — *N. Y. Times*.

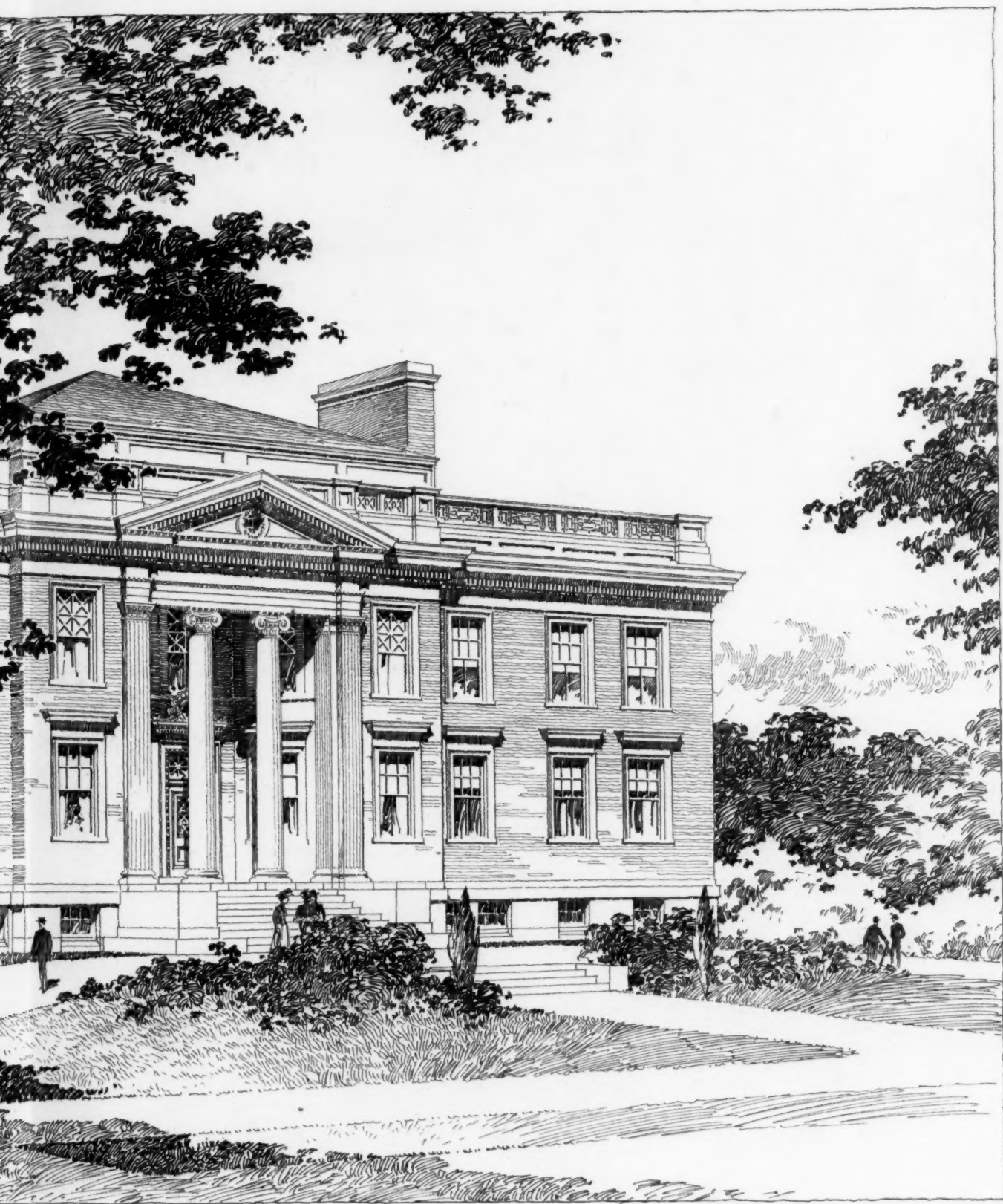
AN ARCHITECTURAL SURVIVAL. — Bow Church, to the rectory of which Mr. Hutton, the late librarian of the National Liberal Club, is being instituted, possesses what Darwinists would call a "survival." This is the curious balcony beneath the clock, which represents the mediæval tower from which the court witnessed the tournaments in Cheapside. It was originally a wooden structure, which on one occasion collapsed, so that Queen Philippa and all her ladies "fell with great shame" on the heads of the assembled knights. Jerry-building was discouraged in those brave days, and the careless carpenters were ordered to be executed. The royal balcony was last used by Queen Anne in the first year of her reign at a "pageant" devised by the "City Poet," Elkanah Settle. — *Westminster Gazette*.



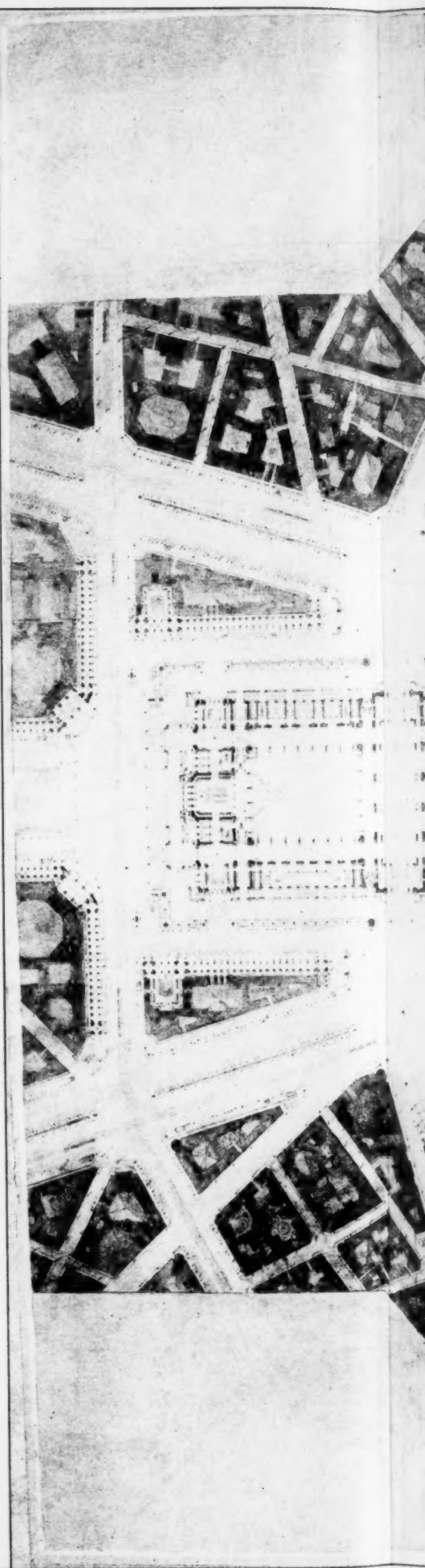


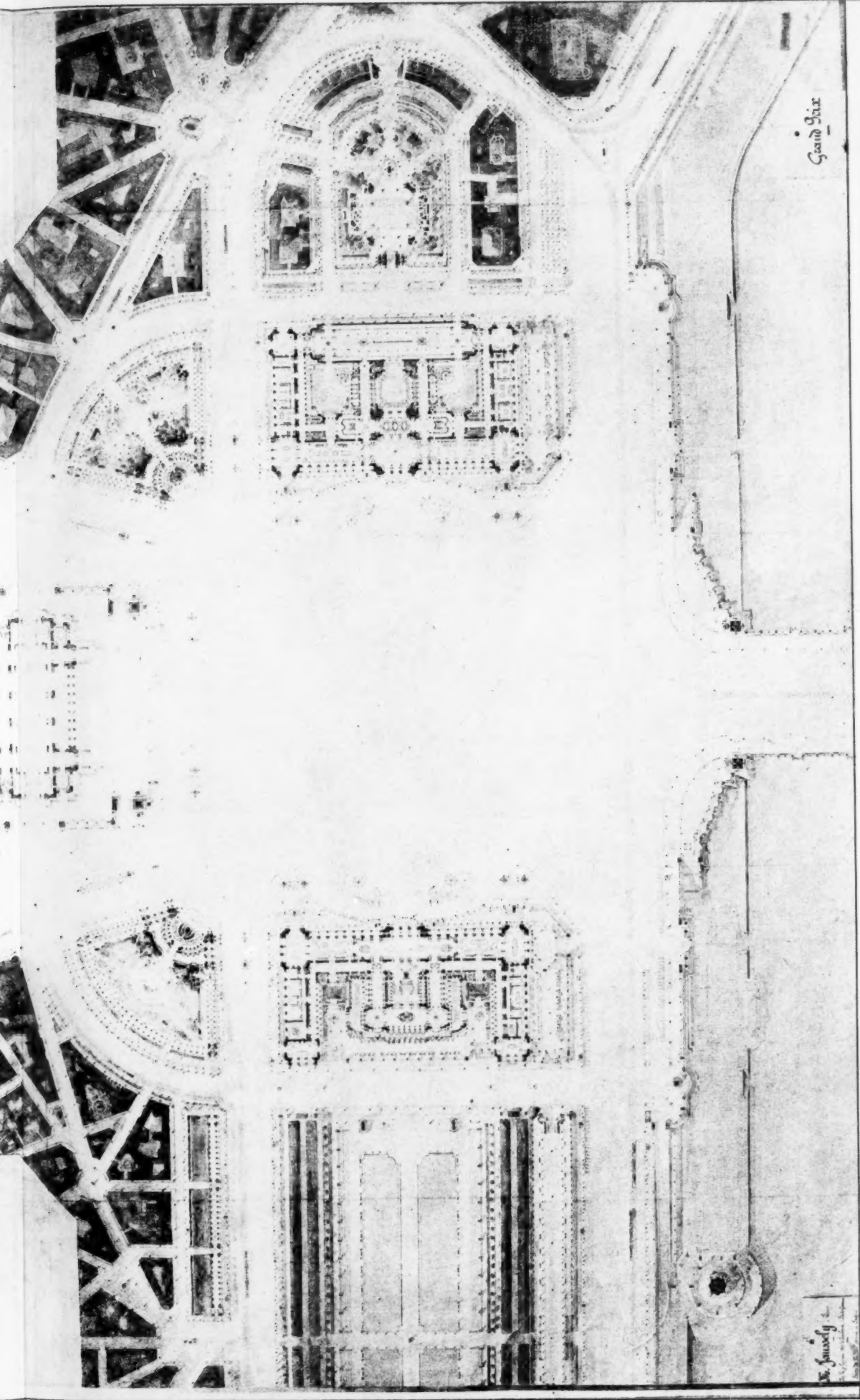
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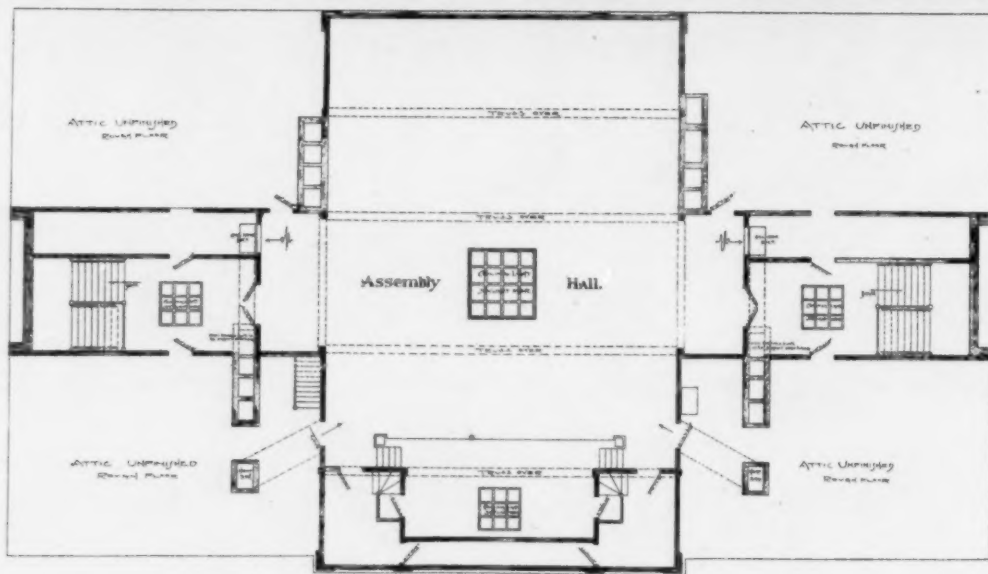
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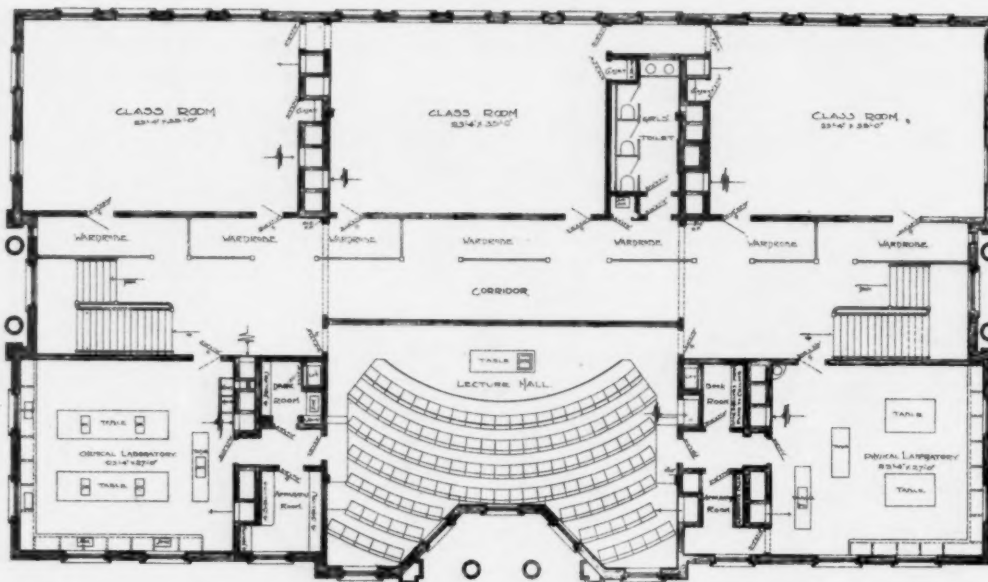
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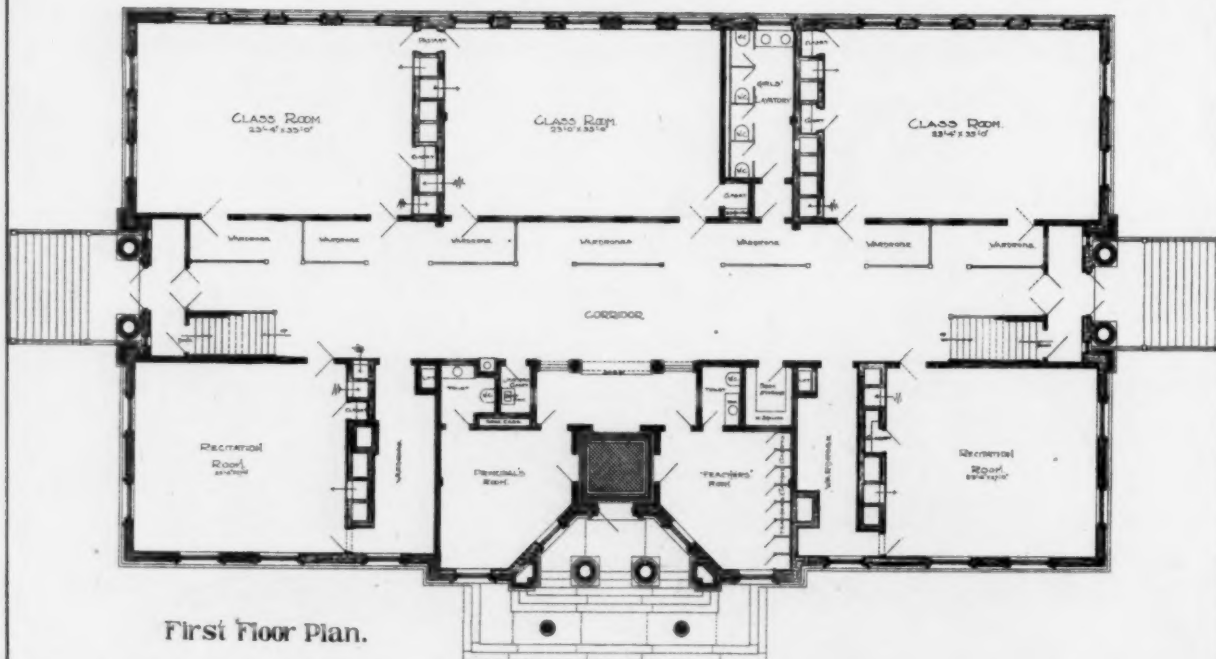
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Third Floor Plan.



Second Floor Plan.



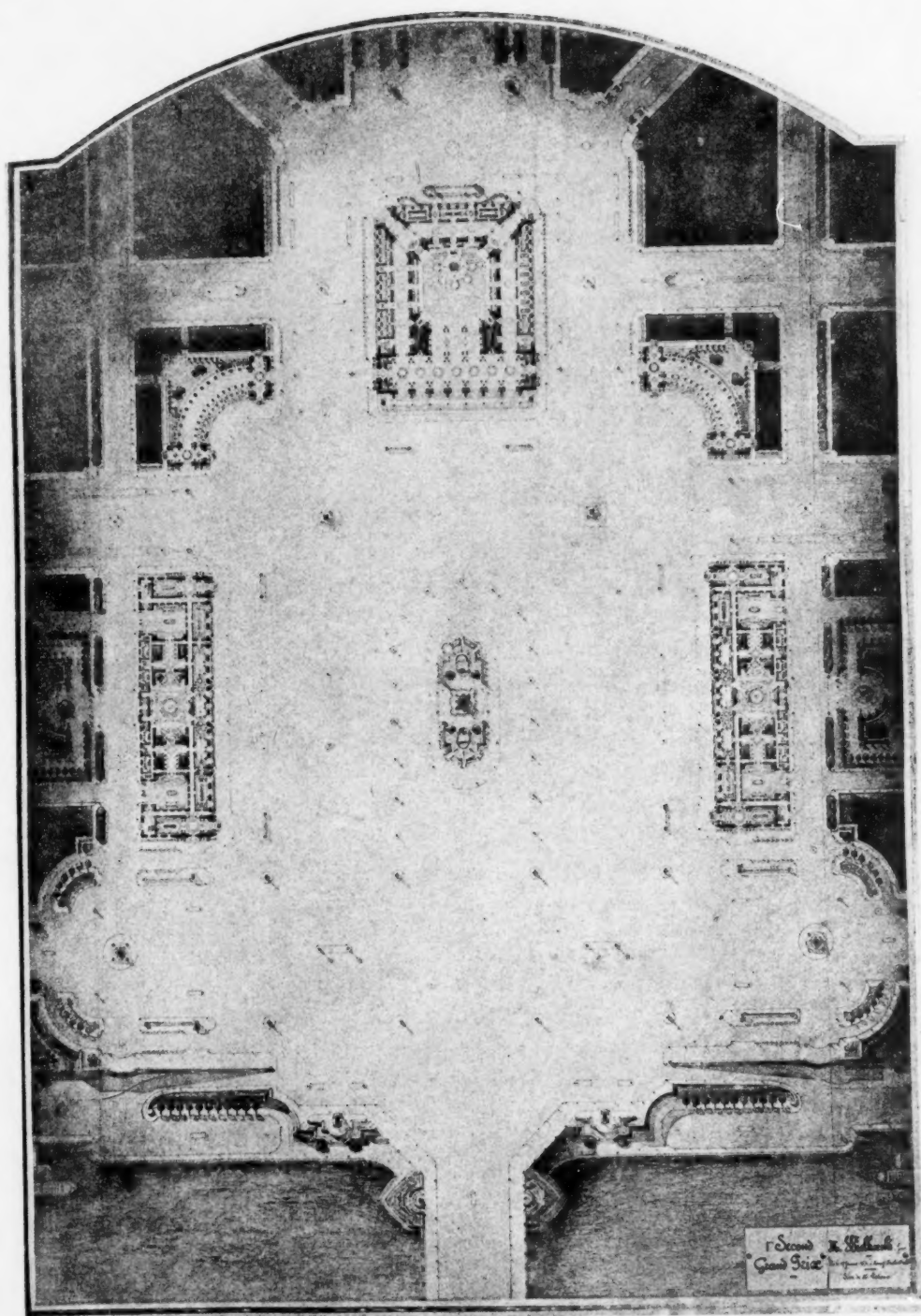
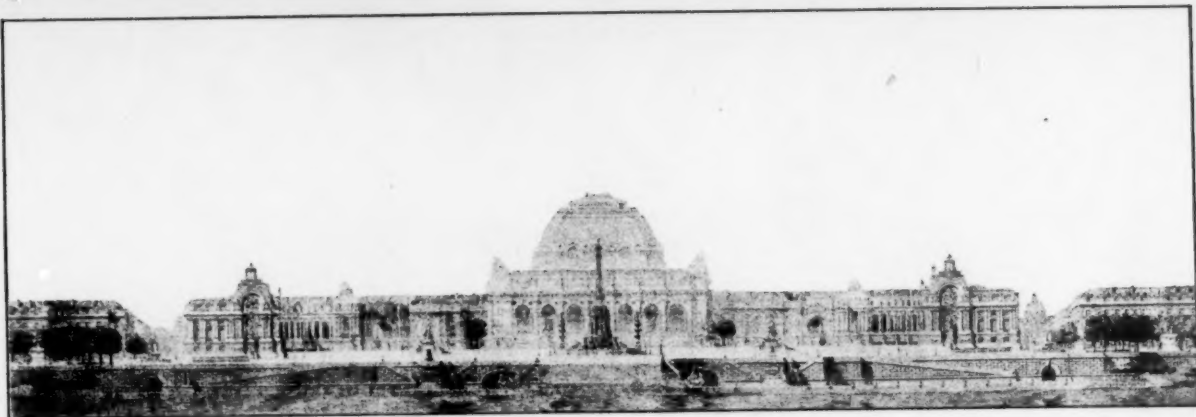
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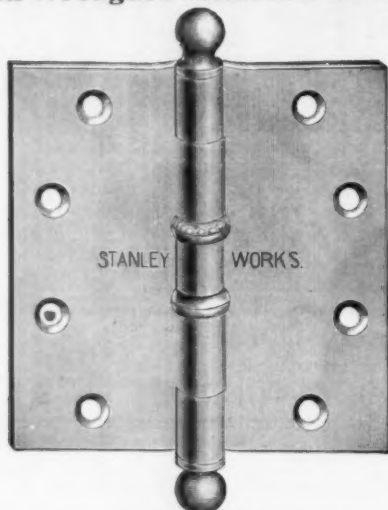
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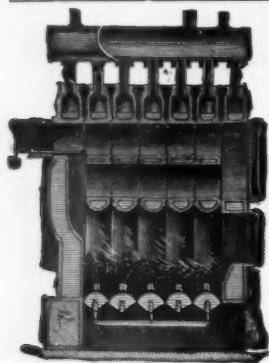
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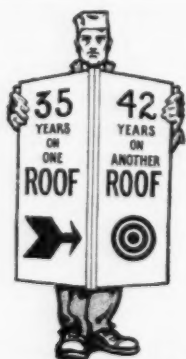


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## CODE OF PRACTICE FOR SUB-ESTIMATING AND SUB-CONTRACTING

Adopted by the Master Builders' Association of the City of Boston, Aug. 2, 1894.

### ARTICLE I.

#### Obligation of Principal Contractor to Sub-Contractor.

A principal contractor is under obligation to treat upon an equal basis all estimates which he "receives" prior to putting in his own bid. Estimates must be considered as "received" when they come into a principal contractor's possession, either by his direct solicitation or by being accepted by him. The opening of a bid, knowing it to be such, constitutes receipt of the same.

A principal contractor is under no obligation to use a bid which he has not solicited, accepted, or received, but if he does not wish to use the estimate of a sub-bidder he should decline it, if proffered personally, or should return it unopened if sent to him by mail or otherwise. The retention of a bid should be construed as a receipt of the same.

A principal contractor, when making up his estimate, is not entitled to receive bids from sub-contractors if he is at the same time making himself their competitor by figuring their portion of the contemplated work. It is legitimate for a principal contractor to figure all portions of work, depending upon no one for what are usually known as sub-estimates, but it is not legitimate for him to receive bids from others for sub-work if he is himself figuring those portions independently.

### ARTICLE II.

#### Award of Sub-Contracts.

The principal contractor having been awarded a general contract should immediately award the sub-contracts to the lowest bidder in each branch.

### ARTICLE III.

#### Penalty for not Awarding Contract to Lowest Sub-Bidder.

A principal contractor failing to award a sub-contract to the lowest sub-bidder to whom he is under obligation as previously provided should be liable to pay damages to the said lowest bidder, in amount not less than ten per cent of the amount of the estimate.

Payment of such damages will not relieve the principal contractor from liability to discipline under provisions of Article X of the By-Laws of this Association.

### ARTICLE V.

#### Payments to Sub-Contractors.

Unless the contracts made with sub-contractors otherwise provide, payments during the progress of the work should be made by the principal contractor to the sub-contractors upon the same basis of payment, in relation to amount of work performed, as is prescribed in the contract made by the principal contractor with the owner.

Final payment to a sub-contractor should be considered as due at the expiration of thirty days after the completion of his work and its approval by the architect or owner, unless otherwise provided by the sub-contract or agreement.

### ARTICLE VII.

#### Obligation of Sub-Contractor to Principal Contractor.

Should a sub-contractor refuse to contract at the amount of the estimate he has given to a principal contractor who has used the said estimate in good faith, he then should be liable to the said principal contractor for damages in amount not less than the difference between the amount of the estimate which was submitted by him and the amount at which the principal contractor may be obliged to contract the work.

Payment of such damages will not relieve the sub-contractor from liability to discipline under provisions of Article X of the By-Laws of this Association.

### ARTICLE X.

#### Bids to Architects or Owners.

When bids for separate departments of work on a building are solicited by the architect or the owner, they should be submitted with the understanding that they are direct estimates, for which direct contracts are to be made by the owner with the lowest bidder, and no other disposition of such bids should be permitted without consent of the bidder submitting the same.

Sub-bids should be given only to the principal contractors who are estimating the work in question, and should not be left with architects or owners for the inspection and information of principal contractors. Sub-contractors must understand that bids thus left with architects or owners are in great danger of losing their confidential character, and that if they so leave them they cannot claim protection or redress under the first article of this Code.

### SUGGESTIONS.

Members of this Association having sub-contracts to let, or material to buy, should, as far as may be consistent with business principles, deal only with members of the Association, or at all events give their fellow-members an opportunity to compete, and then give them the preference, other things being equal.

All bidders should take cognizance of the danger they may be subjected to through the practice, so prevalent in some architects' offices, of making change in plans or specifications, or in both, during the progress of estimating. Correction of this pernicious practice can only be obtained through refusal by contractors to estimate under such conditions.

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## PUBLIC BUILDINGS

|                                                  |              |
|--------------------------------------------------|--------------|
| City Hall, New York, N. Y. . . . .               | Date 1803-12 |
| Old State House, Boston, Mass. . . . .           | " 1748       |
| Pennsylvania Hospital, Philadelphia, Pa. . . . . | " 1755       |
| Carpenters' Hall, Philadelphia, Pa. . . . .      | " 1770       |
| Independence Hall, Philadelphia, Pa. . . . .     | " 1729       |
| Faneuil Hall, Boston, Mass. . . . .              | " 1741       |
| and others.                                      |              |

## CHURCHES

|                                                         |           |
|---------------------------------------------------------|-----------|
| King's Chapel, Boston, Mass. . . . .                    | Date 1749 |
| Seventh-day Baptist Church, Newport, R. I. . . . .      | " 1729    |
| Christ Church, Alexandria, Va. . . . .                  | " 1767    |
| Christ Church, Philadelphia, Pa. . . . .                | " 1727    |
| St. Paul's Chapel, New York, N. Y. . . . .              | " 1764    |
| Old South Church, Boston, Mass. . . . .                 | " 1729    |
| First Church, Hingham, Mass. . . . .                    | " 1681    |
| St. John's Chapel, New York, N. Y. . . . .              | " 1803    |
| First Congregational Church, Canandaigua, N. Y. . . . . | " 1812    |
| St. Peter's P. E. Church, Philadelphia, Pa. . . . .     | " 1758    |
| Gloria Dei Church, Philadelphia, Pa. . . . .            | " 1700    |
| and others.                                             |           |

## IMPORTANT HOUSES

|                                              |           |
|----------------------------------------------|-----------|
| Fairbanks House, Dedham, Mass. . . . .       | Date 1636 |
| Royall Mansion, Dedham, Mass. . . . .        | " 1737    |
| Philipse Manor House, Yonkers, N. Y. . . . . | " 1745    |
| Tudor Place, Georgetown, D. C. . . . .       | " 179-    |
| Mappa House, Trenton, N. Y. . . . .          | " 1809    |
| Woodlawn, Va. . . . .                        | " 1799    |
| Mount Vernon, Va. . . . .                    | " 1743    |
| and others.                                  |           |

Incidentally there are shown special measured drawings or large views of the following features and details:

|                                |    |          |
|--------------------------------|----|----------|
| Porches and Doorways . . . . . | 67 | Subjects |
| Staircases . . . . .           | 23 | "        |
| Mantelpieces . . . . .         | 89 | "        |
| Pulpits . . . . .              | 9  | "        |
| Fanlights . . . . .            | 60 | "        |

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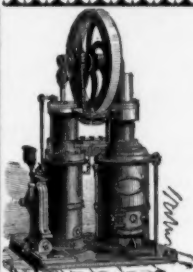
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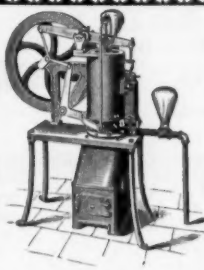
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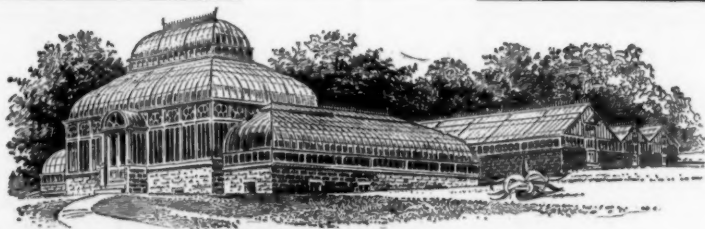
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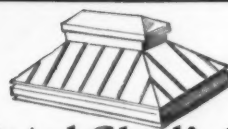
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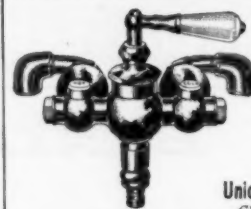
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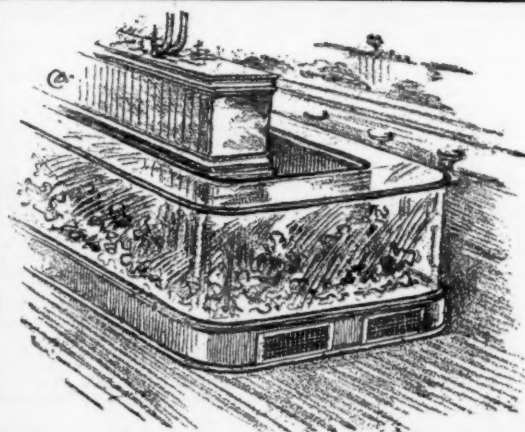
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(Advance Rumors Continued.)

school for \$36,500, heating and plumbing not included. Contract for same will be awarded later.

**Dallas, Tex.**—The congregation of the Trinity Methodist Church will erect an edifice at McKinney Ave. and Pearl St., at a cost of \$50,000.

**Danbury, Conn.**—The Connecticut State Board of Education has commissioned Hartwell, Richardson & Kirver, of Boston, to prepare plans and specifications for the State Normal School which is to be erected here. An appropriation of \$100,000 has been granted for the building.

**Danby, Vt.**—By the will of the late S. L. Griffith, \$51,000 is placed in the hands of Wilber H. Griffith and George L. Rice, as trustees, for the purpose of erecting and maintaining a library here.

**Des Moines, Ia.**—Plans have been prepared for a three-story building to be erected on Pleasant St. for the Iowa Methodist Hospital Association. Cost, \$50,000.

**Fitchburg, Mass.**—The parish of the Immaculate Conception are to erect a brick chapel and school, to cost about \$15,000.

**Grand Forks, N. D.**—The fire department is agitating the question of erecting new building.

**Guthrie, Okla. Ter.**—D. Swank has secured the contract for erecting the Logan County High School for \$32,000.

**Haverhill, Mass.**—The contract for erecting the gymnasium connected with Bradford Academy has been awarded to Killey Bros., for \$18,000.

**Homestead, Pa.**—The Hungarian Reformed congregation will erect a \$20,000 edifice on 9th St.

**Hopkinsville, Ky.**—Jas. L. Long has completed plans for an addition to the South Kentucky College. Estimated cost, \$30,000.

**Huron, S. D.**—The contract for erecting the \$20,000 school at 4th and Kansas Sts. has been awarded to Wm. Tohnle.

**Jersey City, N. J.**—Architects Dodge & Morrison, 82 Wall St., New York City, have prepared plans

### BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

for a four-story brick parish building, 63' x 117', to be erected at Bergen Ave. and Forest St. for the congregation of the First Congregational Church, at a cost of \$100,000.

**Junction City, Kan.**—The Junction City Board of Education has let the contract for the construction of its high-school building to the firm of Ziegler & Dalton, of Topeka. The cost of the building will be \$30,000.

**Knoxville, Tenn.**—The Knoxville, La. Follette & Jellico Railway has awarded the contract to erect the new depot of the road at this place. The contract has been awarded to J. W. Borebas and L. A. Galyon who will begin work at once. The structure will be located on Asylum Ave., just west of the business centre of the town, and will cost \$40,000. The city will build a fire-house on Commerce Ave.

**Lexington, Mass.**—The Vaille estate located on Bedford and N. Hancock Sts., containing 200 acres has been sold. The estate comprises the grounds now used by the Lexington Golf Club, the Tidd farm on Hancock St., 44 lots near the North Lexington station and the Tidd wood on N. Hancock St. The price paid was in excess of \$40,000. The title was taken by Sylvester Butler in the interest of a syndicate which will establish a country club.

**Little Rock, Ark.**—The Building Committee for the Board of Trustees of the University of Arkansas have awarded the contract for the erection of an engineering hall to Albert Byrne, of Fayetteville, for \$16,950. The building will be erected in accordance with the plans and specifications furnished by Architect F. W. Gibb, and will be completed by March 1, 1904.

**Los Angeles, Cal.**—The new Masonic Temple, Boyle Heights, is to be built at 1954 E. 1st St. from plans by Burnham & Bleisner. Cost, \$35,000.

**Louisville, Ky.**—Plans have been filed for the erection of a jail at 6th and Green Sts., to cost \$253,000. D. X. Murphy & Bro., architects, 250 Fifth St. Steps will at once be taken looking toward the

### BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

selection of a plan for the new library building. The leading architects of the country will be invited to submit drawings.

**Magnolia, Mass.**—Three acres of valuable land at this place, jointly owned by Dr. George H. Newell, D. B. Smith, W. J. Newell and Benjamin A. Smith have been bought by Mrs. Harriet G. Curry, of Pittsburgh, Pa., who has commissioned a well known architect to draw plans for a costly dwelling to be erected thereon.

**Marion, Ind.**—The County Commissioners will soon receive bids for the erection of a jail in this city, at a cost of \$115,000.

**Muncie, Ind.**—The City Council is considering the erection of a \$125,000 city-hall at Jefferson and Jackson Sts.

**Nashua, N. H.**—It is stated that Thos. M. James, 105 Federal St., Boston, Mass., has been selected as the architect for a high school in this city, provided a school may be built according to plans prepared by him, for \$55,000, exclusive of architect's fees.

**New York, N. Y.**—Plans have been completed in the office of Architects Sass & Smallheiser, 23 Park Row, for a tenement-house to be built at 87 and 89 Cook St., Brooklyn, for Mr. Morris Kotlowitz. It will be a five-story building of irregular dimensions, to be constructed of brick and stone, and to cost about \$50,000.

Architect Raymond F. Almiraal has prepared plans for the completion of the Gouverneur Hospital at a cost of \$250,000, and also for an ambulance station to cost \$25,000. It will front 116 feet in Water St., beginning at No. 621 Water St., running through to Front St. The structure will be five and a half stories high and will have a handsome front, the building materials being brick, stone and terra-cotta.

The Odd Fellows of the State are to erect a temple here from plans drawn by Warner & Windolph, architects. The building, which is to be five stories high, is to cost with the land, \$350,000.

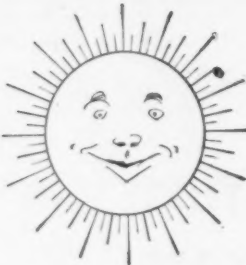
**Oakland, Cal.**—A brick business block is to be



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### BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

erected at the northeast corner of Franklin and 9th Sts. for E. W. Kinney. The structure will be of brick, three stories in height, with a deep basement with cemented floor. The proposed building will cost about \$20,000.

**Oklahoma City, Okla. Ter.**—The congregation of the First Baptist Church will erect an edifice, to cost \$40,000.

**Parkersburg, W. Va.**—J. D. Silcott will erect the building for the fire department in the 5th Ward.

**Penn Yan, N. Y.**—This village will accept Andrew Carnegie's gift of \$10,000 for a public library building. It has also decided to bond the village for \$20,000 for new school-building.

**Perryville, Mo.**—The citizens have voted to erect a \$40,000 court-house here.

**Philadelphia, Pa.**—Roydhouse, Arrey & Co. have secured the contract for the erection of the Merchants' Warehouse, at 15th and Carpenter Sts., for the Pennsylvania Railroad Co., estimated to cost about \$80,000. The proposed structure will be four stories high, and it will measure 60' x 398'.

Sturgis & Barton, of Boston, Mass., will prepare plans for a three-story brick residence to be erected at 18th and Pine Sts. for Philip L. Spalding, Ch. Engr. Bell Telephone Co., at a cost of \$50,000.

**Pittsburgh, Pa.**—The Central District and Printing Telegraph Co. has had plans prepared for a nine-story fireproof steel frame building, to be erected in the rear of its general office-building at 7th Ave. and Moutour Way. The structure will be modern in every way and will cost about \$225,000 when completed.

The site including 32 acres on the eastern border of Schenley Park, facing Woodlawn Ave., has been chosen for the Carnegie Technological School. The school was offered by Mr. Carnegie some time ago, when he proposed that if the city would provide a site he would build and equip the school and endow it with \$2,000,000.

Grosvenor Atterbury, 25 W. 33d St., N. Y. City, has made plans for an eight-story building to be erected at 6th St. and Duquesne Way for Henry Phipps. Estimated cost, \$250,000.

**Reading, Mass.**—J. B. Lewis has sold a lot of land on Washington St., containing about 5,000 feet. James H. Bothwick, the purchaser, will erect a large storage warehouse on the land.

**Reno, Nev.**—Architect John Dodd has completed the plans for the Voght block to be erected on Virginia and 1st Sts. It is a three-story building and will cost between \$70,000 and \$80,000.

**San Leandro, Cal.**—Plans are now being prepared for a fine new hall, which will be erected shortly on the property formerly owned by the late Hannah Reid, located on Haywards Ave., between Davis and Chumalis Sts.

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### BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

**Shamokin, Pa.**—The Shamokin Lumber & Mfg. Co. has secured the contract for erecting a brewery here. The building will be of stone and brick, 65' x 110', five stories high; estimated cost without machinery, \$40,000.

**South McAlester, I. T.**—At a meeting of the World's Fair directors for the Indian Territory recently, the plans for the Indian Territory building were carefully gone over and approved. It is a handsome building of Colonial style and will be 70' x 190'. It will cost from \$16,000 to \$18,000 and will be of the finest workmanship.

**Spokane, Wash.**—William Bacon is having plans drawn by Architects Prensse & Zittel for a modern apartment-building to be erected on Walnut, extending through from 1st to Pacific. The building, which is to be a two-story brick, will be 50' x 155' in dimensions, and will have fronts on all three streets. It is to have 12 apartments of five or six rooms each and will cost \$30,000.

**St. Paul, Minn.**—Architect T. C. Terri, 61 E. 9th St., has designed plans for a two-story brick sub-station and office-building to be erected on Wabasha, between 10th St. and College Ave. for the Twin City Rapid Transit Co. Cost, \$65,000.

**Superior, Wis.**—Plans will be drawn by Earl W. Barber, Hammond Block, for the public building to be erected here for which Congress has appropriated \$250,000.

### PROPOSALS.

#### CHAPEL.

Sealed bids or proposals will be received at the office of Supt. Wm. K. Fowler, Secretary of the Board of Education of the State Normal School, capitol building, Lincoln, Neb., until Saturday, October 3, 1903, for the erection and construction of a chapel building on the grounds of the State Normal School at Peru, Nemaha County, Neb. Plans and specifications are on file in the offices of Supt. Wm. K. Fowler, secretary, capitol building, Lincoln; Mr. George Rogers, president of the Board, 1506 Farnam St., Omaha; Principal W. A. Clark, State Normal School, Peru; and Mr. George A. Berlinghof, architect, Beatrice. By order of the Board of Education of the State Normal School. WM. K. FOWLER, Secretary. 1448

#### SEWERS.

Sealed proposals will be received until October 5, 1903, by the Special Sewerage Commission, at the office of the undersigned, in the city of Lancaster, Pa., for extending Water St., Clay St. and Lennon St. sewers. Plans and specifications and all information will be furnished by the city engineer, at his office. The commission reserves the right to reject any or all bids. J. H. HATHFON, City Controller. 1448

#### COURT-HOUSE.

The Board of Supervisors of Lauderdale County, Miss., will receive sealed proposals for the erection of a county court-house complete, as per plans and specifications prepared by Krouse & Hutchinson on file in the office of the Clerk of said Board. All bids to be opened on October 7, 1903. B. V. WHITE, Clerk of the Board of Supervisors, Meridian, Miss. 1448

#### ELECTRIC TRAVELLING CRANE.

Bids will be received October 10 by Mr. Michael T. Endicott, Ch. of Bureau of Yards and Docks, Navy Dept., Washington, D. C., for furnishing a 3-motor electric travelling crane of 40,000 pounds capacity at Navy Yard, Boston. 1449

### PROPOSALS.

#### HEATING AND PLUMBING.

[At Washington Barracks, D. C.]  
U. S. Engineer Office, Washington Barracks, D. C. Sealed proposals will be received here until October 5, 1903, for heating apparatus and plumbing fixtures at Washington Barracks, D. C. Information on application. JOHN STEPHEN SEWELL, Capt., Engrs. 1448

#### LIBRARY.

[At Carthage, Mo.]  
Bids are wanted October 5 for erecting a stone library. F. C. Gunn, archt., Shukert Bldg., Kansas City, Mo. Address A. F. LEWIS, Sec'y. 1448

#### ELECTRICAL SUPPLIES, PIPE FITTINGS, ETC.

[At New York, N. Y.]  
Bids will be received October 6 at the Bureau of Supplies and Accounts, Navy Dept., Washington, D. C., for furnishing at the navy yard, New York, a quantity of electrical supplies, pig and band iron, steel plates, asbestos, iron pipe, pipe fittings, etc. H. T. B. HARRIS, Paymaster Gen., U. S. A., Washington, D. C. 1448

#### CEMENT SIDEWALKS.

[In District of Columbia.]  
Office of the Commissioners, D. C., Washington, September 15, 1903. Sealed proposals will be received at this office until October 3, 1903, for laying cement sidewalks in the District of Columbia. Blank forms of proposal and specifications, together with all necessary information, may be obtained at the office of the Engineer Commissioner, D. C. H. B. F. MACFARLAND, HENRY L. WEST, JOHN BIDDLE, Commissioners, D. C. 1448

#### SCHOOL-BUILDING.

[At Lima, O.]  
Sealed proposals will be received by the clerk of the Board of Education of the Lima city school district until October 5, 1903, for the erection of a four-room school-building to be erected on the northeast corner of Calumet Ave. and Eureka St. in Lima, O., and a four-room school-building to be erected on the corner of Richle Ave. and Charles St., Lima, O., in accordance with plans and specifications which will be on file on and after September 15, 1903, at the office of J. A. Chapin, architect, Holland Building, Lima, O. ANNIE DISMAN, Clerk of the Board of Education. 1449

#### ROOF AND FLOOR CONSTRUCTION.

[At Washington Barracks, D. C.]  
U. S. Engineer Office, Washington Barracks, D. C. Sealed proposals will be received here until October 12, 1903, for tin roof and asphalt floor construction at the Government Printing Office. Information furnished on application. JOHN STEPHEN SEWELL, Capt., Engrs. 1449

Treasury Department, Office Supervising Architect, September 19, 1903. Proposals will be received in this office on or before the 12th day of October, 1903, for two vault doors to be installed in the cash-room, office of the U. S. Treasurer, Treasury Department Building, Washington, D. C., in accordance with drawing and specification which may be obtained at this office. JAMES KNOX TAYLOR, Supervising Architect. 1449

Treasury Department, Office of the Supervising Architect, Washington, D. C., September 22, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 26th day of October, 1903, and then opened, for the construction (including heating apparatus) of the extension to the U. S. Custom-house and Post-office at Bangor, Maine, in accordance with the drawings and specifications, copies of which may be had at this office or at the office of the Custodian at Bangor, Maine, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1449

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### PROPOSALS.

**STEEL BRIDGE.** [At Kansas City, Kan.]  
Office of County Clerk, Court-house, Kansas City, Kan. Sealed proposals will be received at this office **October 5, 1903**, for furnishing and erecting a steel bridge across the Kansas River, at 12th St., said city. Plans, specifications, forms of bids and necessary information may be obtained at this office. **FRANK HOLCOMB**, County Clerk. 1448

**CONSTRUCTION, HEATING, PLUMBING, ETC.** [At Fort Caswell, N. C.]  
Sealed proposals will be received here until **October 19, 1903**, for constructing, plumbing, heating and wiring guard-house, hospital and one officers' quarters; constructing, plumbing and wiring Q. M. workshop, and 3 sets N. C. S. quarters at this post. Information furnished on application. **PHILIP YOST**, Q. M. 1450

**OFFICE-BUILDING.** [At Charleston, S. C.]  
Bids will be received **October 24** by Mordecai T. Endicott, Ch. of Bureau of Yards and Docks, Navy Dept., Washington, D. C., for a brick office-building, 39' x 80', at the Navy Yard, Charleston. 1450

**COURT-HOUSE.** [At Beonville, Ind.]  
Bids are wanted **October 26** for erecting a court-house, to cost about \$65,000. Architects, **Harris & Shopbell**, of Evansville. 1450

### PROPOSALS.

**LOCK GATES.** [At Plaquemine, La.]  
U. S. Engineer Office, Custom-house, New Orleans, La. Sealed proposals for constructing lock gates, Plaquemine, La., will be received here until **October 29, 1903**. Information furnished on application. **H. M. ADAMS**, Lt. Col., Engrs. 1450

**SCHOOL-BUILDING.** [At Harrisburg, Pa.]  
The Committee on Buildings, Furniture and Grounds of the Board of School Directors of the Harrisburg School District, will receive competitive plans for a twelve-room building to be located on State St., between 16th and 17th Sts., until **October 30, 1903**. The competition is open to all architects and only the plans adopted will be paid for. For further information apply to the undersigned. **D. D. HAMMELBAUGH**, Secretary, 121-123 Chestnut St. 1451

Treasury Department, Office of the Supervising Architect, Washington, D. C., September 3, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 29th day of September, 1903, and then opened, for the installation of an electric passenger elevator and a hydraulic freight lift in the U. S. Court-house, Custom-house and Post-office building at Memphis, Tennessee, in accordance with the drawing and specification, copies of which may be obtained at this office at the discretion of the Supervising Architect. **JAMES KNOX TAYLOR**, Supervising Architect. 1448

**BUILDINGS.** [At Washington, D. C.]  
Board of Commissioners, U. S. Soldiers' Home, Office of Constructing Officer, Washington, D. C., September 5, 1903. Sealed proposals will be received at this office until 2 o'clock P. M. on the 5th of October, 1903, and then opened for the construction of an administration building and of an addition to the Barnes Hospital at the U. S. Soldiers' Home, Washington, D. C., in accordance with the drawings and specifications, copies of which may be had at the office of the architect, **W. M. Poindexter**, 806 Seventeenth St., Washington, D. C., in the discretion of the undersigned. Separate proposals will be received for plumbing and gas-fitting, electric-light work and elevator. **CHAUNCEY B. BAKER**, Captain and Q. M. U. S. A. Constructing Officer, Room 320, War Department. 1448

### PROPOSALS.

Treasury Department, Office of the Supervising Architect, Washington, D. C., September 5, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 12th day of October, 1903, and then opened, for the low pressure steam heating apparatus, complete in place for the U. S. Court-house, Post-office and Custom-house at Tampa, Florida, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Tampa, Florida, at the discretion of the Supervising Architect. **JAMES KNOX TAYLOR**, Supervising Architect. 1448

Treasury Department, Office of the Supervising Architect, Washington, D. C., September 15, 1903. Sealed proposals will be received at this office until 2 o'clock P. M. on the 22d day of October, 1903, and then opened, for the construction (including plumbing, heating apparatus, electric wiring and conduits) of the U. S. Post-office at Kirksville, Missouri, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Postmaster at Kirksville, Missouri, at the discretion of the Supervising Architect. **JAMES KNOX TAYLOR**, Supervising Architect. 1448

**LIBRARY.** [At Laverne, Minn.]  
Sealed proposals will be received by the undersigned until **October 1, 1903**, for the erection at Laverne, Minn., of a library building, in accordance with plans and specifications on file in the office of Mayor Furlow, Laverne, the *Improvement Bulletin*, Minneapolis, and the *Argus-Leader*, Sioux Falls, S. D. A. P. **ADAMS**, Chairman. **MRS. E. A. BROWN**, Secretary. 1448

**LIBRARY STACK WORK.** [At New York, N. Y.]  
Sealed bids will be received by the Park Board at the office of the Department of Parks until **Thursday, October 8, 1903**, Borough of Manhattan, Contract No. 4. For work and materials for erection and completion of the library stack work in the New York Public Library, Astor, Lenox and Tilden Foundations, 5th Ave., 40th and 42d Sts. Blank forms may be obtained and plans may be seen at the office of the Department of Parks, the Arsenal, Central Park, and also at the office of the architects, **Carrère & Hastings**, No. 28 E. 41st St. For full particulars see City Record. **WILLIAM R. WILLCOX**, **JOHN E. EUSTIS**, **RICHARD YOUNG**. 1449



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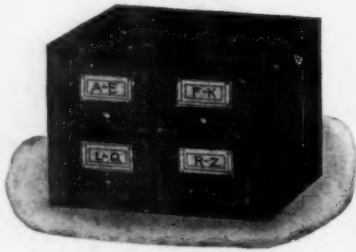
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SECTION 2. A Member having any ownership in any building material, device or invention, proposed to be used on work for which he is architect, should inform his employer of the fact of such ownership.

SECTION 3. No Member should be a party to a building contract except as "owner."

SECTION 4. No Member should guarantee an estimate or contract by personal bond.

SECTION 5. It is unprofessional to offer drawings or other services "on approval" and without adequate pecuniary compensation.

SECTION 6. It is unprofessional to advertise in any other way than by a notice giving name, address, profession, and office hours, and special branch (if such) of practice.

SECTION 7. It is unprofessional to make alterations of a building designed by another architect, within ten years of its completion, without ascertaining that the owner refuses to employ the original designer, or, in event of the property having changed hands, without due notice to the said designer.

SECTION 8. It is unprofessional to attempt to supplant an architect after definite steps have been taken toward his employment.

SECTION 9. It is unprofessional for a Member to criticize in the public prints the professional conduct or work of another architect except over his own name or under the authority of a professional journal.

SECTION 10. It is unprofessional to furnish designs in competition for private work or for public work, unless for proper compensation, and unless a competent professional adviser is employed to draw up the "conditions" and assist in the award.

SECTION 11. No Member should submit drawings except as an original contributor in any duly instituted competition, or attempt to secure any work for which such a competition remains undecided.

SECTION 12. The American Institute of Architects' "schedule of charges" represents minimum rates for full, faithful and competent service. It is the duty of every architect to charge higher rates whenever the demand for his services will justify the increase, rather than to accept work to which he cannot give proper personal attention.

SECTION 13. No Member shall compete in amount of commission, or offer to work for less than another, in order to secure the work.

SECTION 14. It is unprofessional to enter into competition with or to consult with an architect who has been dishonorably expelled from the "Institute" or "Society."

SECTION 15. The assumption of the title of "Architect" should be held to mean that the bearer has the professional knowledge and natural ability needed for the proper invention, illustration and supervision of all building operations which he may undertake.

SECTION 16. A Member should so conduct his practice as to forward the cause of professional education and render all possible help to juniors, draughtsmen and students.

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